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US EPA RECORDS CENTER REGION 5



471606

REPORT OF GROUND-WATER QUALITY

FOR THE

**SHERIDAN-ALBION TOWNSHIP LANDFILL
SHERIDAN-ALBION TOWNSHIP, CALHOUN COUNTY, MICHIGAN**

MARCH 2000

Prepared For:

**CITY OF ALBION
112 WEST CASS STREET
ALBION, MICHIGAN 49224**

**DECKER MANUFACTURING CORP.
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Prepared By:

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recycled paper

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1.0. INTRODUCTION

On behalf of Decker Manufacturing Corporation and the City of Albion (Settling O&M Defendants), this report was developed by Hull & Associates, Inc. (HAI) to comply with monitoring and reporting requirements established in the approved Operation and Maintenance Plan (O&M Plan). The information contained in this report represents the initial ground-water sampling event identified as Year #1, Quarter #1. Additionally, this report includes the air emissions model for landfill gas required to be completed to comply with Section 3.3 of the O&M Plan.

Prior to completing this initial ground-water sampling event, a meeting and additional correspondence was conducted between the settling O&M defendants, MDEQ, and U.S. EPA to discuss required revisions to the Quality Assurance Project Plan (QAPP). Changes to the QAPP were required to address the analytical laboratory selected to complete the chemical analysis; as well as a few other minor revisions. So as not to delay the implementation of the monitoring program, it was agreed that the initial sampling event should proceed while revisions to the QAPP were being completed. (The subsequent sampling event completed on January 27, 2000 was completed following the revisions required by the MDEQ and U.S. EPA to the QAPP).

Field activities were completed at the facility in October of 1999 in accordance with the O&M Plan. These activities involved the sampling of six monitor wells screened in the shallow bedrock unit, two residential wells, the monitoring of five methane probes, and the collection of methane gas samples from two methane vents and at the down-wind fence line. Residential well RW07 was not sampled during this event as required as the dedicated water supply pump prohibited access. Therefore, no sample could be collected. Action was taken to correct this problem and a sample was collected in the subsequent sampling event conducted on January 27, 2000.

2.0 GROUND-WATER MONITORING

2.1 Sampling And Analysis

The wells required to be monitored on a quarterly basis consist of three residential wells (RW04, RW06, and RW07) and six shallow bedrock wells (MW02SB, MW04SB through MW06SB, MW08SB, and MW09SB). Figure 1 illustrates the location of the groundwater monitor wells on or near the landfill property.

Ground-water samples were collected by representatives of HAI and analyzed by Test America Inc. A total of eight ground-water samples were collected during the October 1999 sampling event. Samples were collected from six shallow bedrock monitor wells and two residential wells. Additionally, a duplicate sample was also collected from a randomly selected monitor well (MW06SB). One field blank and one trip blank were also collected and analyzed for quality assurance/quality control purposes.

2.2 Laboratory Analytical Data

The laboratory analytical and quality control reports developed by Test America for the October 1999 sampling event, are provided in Attachment A-1. Provided in Attachment A-2 are copies of the ground-water monitor well field data sheets. Copies of the Chain of Custody and Request for Analysis forms are provided in Attachment A-3.

Included in Attachment B-1 are Tables 1-6, which provides a summary of the laboratory analytical data for the inorganic and organic parameters compiled for each of the monitor wells. Included in Attachment B-2 are Tables 7 and 8, which provide a summary of the laboratory analytical results for the residential wells.

The laboratory analytical and CLP-like quality control reports were subcontracted to ECT.CON, Inc. of Imperial, Pennsylvania for third party data validation. The results of the third party validation indicate that the analytical data report for the October 1999 O&M sampling event were valid. After discussions with U.S. EPA and MDEQ, it was decided that the results of the third party validation are not to be included in this report due to the excessive size of the data package. However, these results will be available upon request.

Ground-water samples collected from monitor wells screened in the shallow bedrock unit were analyzed for dissolved Arsenic and Ammonia as required in Section 3.2.3 of the O&M Plan. A review of the analytical results indicate that Ammonia was reported as not detect in all of the samples. None of the wells sampled had detectable levels of Arsenic with two exceptions. Dissolved Arsenic was detected in MW04SB at 0.023 mg/L and in MW06SB at 0.164 mg/L. As required in Section 3.2.10 of the O&M Plan, an arsenic isoconcentration map with spatial distributions in ground-water is illustrated on Figure 3.

Ground-water samples collected from residential wells were analyzed for Antimony, Ammonia, Aluminum, Arsenic, Cobalt, Manganese, Nickel, Benzene, Vinyl Chloride, and 1,2 Dibromo-3-chloropropane as required in Section 3.2.3 of the O&M Plan. A review of the analytical results identified that concentrations for all parameters were reported as not detect in all samples with three exceptions. Ammonia was reported at a concentration of 0.23 mg/L in the sample collected from RW-4, and dissolved Manganese was reported at a concentration of 0.082 mg/L and 0.036 mg/L in RW-4 and RW-6 respectively.

2.3 Data Review

On October 27, 1999, static water elevations were obtained from monitoring wells screened in the unconsolidated saturated unit, shallow bedrock unit, and weathered bedrock unit. Potentiometric surface maps were constructed for each discrete saturated horizon beneath the Site. For each zone ground-water was determined to flow to the west and southwest. Flow becomes more southerly in the southern portion of the Site. Monitor well MW08SG was not utilized in the construction of the potentiometric surface for the unconsolidated unit as it is not in hydraulic conductivity with the other wells. A summary of ground-water elevations are presented on Table 9 in Attachment C-1 and also listed on Figures 4A, 4B, and 4C.

On October 27, 1999, gas probes G-1 through G-5 were monitored for lower explosive limit (LEL) for Methane, Hydrogen Sulfide (H₂S), and oxygen levels. Monitoring was conducted utilizing a MSA Gasport and MSA 62S GasScope for all field parameters. Results from monitoring are presented on Table 10 in Attachment C-2 and indicate that no explosive gases were detected above instrument detection levels. Illustrated on Figure 1 are the locations of the explosive gas monitoring network (GP-1 through GP-5).

3.0 LANDFILL GAS MONITORING

3.1 Objective

Per section 3.3 of the (O&M) Plan, the landfill gas monitoring program is designed to ensure that both air and soil gas meet any Applicable or Relevant and Appropriate Requirements (ARARs) at the fence line. The landfill gas emissions and concentrations of specific VOCs are regulated under Michigan Public Act 348 (NREPA) Part 55.

Per section 3.3.2 of the O&M document, two passive gas vents were installed, as part of the passive venting system, in locations of greatest waste thickness as found on Sheet 7 of the Final Design Drawings prepared by Woodward-Clyde Consultants (WCC). After installation of the vents, emission rates and concentrations of specific VOCs were required to be collected from each vent. Vent VOC concentrations are summarized on Table 12 in Appendix C-3. One fence line sample was also required to be collected downwind of the vents. The calculated emission rates and concentrations for each specific VOC were then used to determine individual and total fence line concentrations by the use of an air dispersion model. The calculated fence line concentrations were then compared to the predicted fence line concentrations to determine if the risk standards were achieved.

The specific VOCs include Benzene, Carbon Tetrachloride, Chloroform, Ethylene Dichloride or 1-2 Dichloroethane, Methylene Chloride, Perchloroethene or Tetrachloroethylene, Trichloroethylene, Vinyl Chloride, and 1-1 Dichloroethylene.

3.2 Emissions Calculations

The Pre-Design study performed by WCC utilized the Landfill Air Emissions Estimation Model (USEPA, 1991, Landfill Air Emissions Estimation Model, EPA-600/8-90-085a, April 1991) for closed landfills to predict the emission rates of the specific VOCs. These predicted emission rates are presented in column 1 of Table 11 in Appendix C.

As required by the O&M Plan, Hull & Associates, Inc. (HAI) calculated the actual gas emission rate from the two passive vents. The actual emission rates were then compared to the Pre-Design predictions of the study. The measured flow rates from the vents were calculated by taking two pressure reading in the vents, one at the top of the vent and one at the bottom of the vent. The

difference in the pressure readings was used to calculate a differential pressure. This differential pressure was then used to calculate the flow rate by utilizing Muller's Low-Pressure equation. Vent #1 and Vent #2 flow rates were calculated as 0.02 cubic feet per minute (cfm) and 1.0 cfm, respectively.

Using the most conservative flow rate, the calculated flow from Vent #2 is applied to all 12 vents installed in the landfill. Therefore, the total flow rate of landfill gas being emitted from the landfill is 1.0 cfm per vent, multiplied by 12 vents equals 12 cfm. This total flow rate is then used to calculate the emission rates of the specific VOCs based on the sampling concentrations collected at the vents. The sampling concentrations of the vents are presented on Table 12 in Appendix C. The calculated emission rate for each toxic pollutant is presented on column 3 of Table 11 in Appendix C.

3.3 Gaussian Model and Fence Line Concentrations

After evaluation of the specific VOC emission rates, the fenceline concentration for each chemical is predicted. WCC utilized the Industrial Source Complex Short Term Model (ISCST3) (Version 95250). The results from this model are presented in column 2 of Table 11 in Appendix C.

Using the same theory, HAI chose to utilize a Gaussian air dispersion model to calculate the fence line concentrations of the specific VOCs. The Gaussian model uses the physical parameters of the landfill, available meteorological data, and the calculated emission rates for each VOC to predict fence line concentrations. These concentrations are presented on column 4 of Table 11 in Appendix C.

3.4 Risk Calculations

To determine the risk associated with the specific VOCs, the concentrations of these chemicals are multiplied by the unit risk factor as derived for the MDEQ screening level. The unit risk factors for the specific VOCs are listed in column 6 of Table 11 in Appendix C. The pollutant concentrations should not exceed a total cancer risk of 1×10^{-6} at the fenceline, using the risk calculation methods set forth in Risk Assessment Guidance for Superfund Sites. The individual and total 70-year risks associated with the pollutants are found on columns 7 and 8 of Table 11 in Appendix C for the Pre-Design model and the evaluation model respectively.

3.5 Conclusion

The calculated emission rates and concentrations for each specific VOC were used to determine individual and total fence line concentrations. The calculated fence line concentrations were then compared to the WCC predicted fence line concentrations to determine if the risk standards were achieved. As found on Table 11 in Appendix C, the individual and total 70-year risk for the specific VOCs do not exceed the maximum risk of 1×10^{-6} at the fenceline. Therefore meeting all regulations under Michigan Public Act 348 (NREPA) Part 55 and ARARs at the fence line.

4.0 LANDFILL INSPECTION

The initial landfill inspection was completed on October 27, 1999 in conjunction with the initial ground-water sampling event at the Site. The inspection was completed by Terry Baehr. The objective of the initial inspection was to establish a baseline of the existing condition of the Site. Weather conditions were sunny, breezy with ambient air temperature in the lower 60's. In addition, areas of long-term maintenance concerns were identified during this initial inspection. These areas of concern were discussed in detail at the Final Certification site walk-over that was completed on November 30, 1999. The areas of concern were documented in a December 1999 correspondence (HAI Document #ALB025.100.0015) that forwarded to the MDEQ and US EPA. A copy of this correspondence is provided in Attachment D.

On December 28, 1999, a supplement site inspection was completed to evaluate site conditions. During the inspection, two significant erosion features were observed in the southwest portion of the landfill in area were the upper drainage swale discharges to the west detection/infiltration basin. Photo-documentation is provided in Attachment E. No corrective actions were taken, as the RA contractor will remobilize to the Site to correct observed problems in the spring of 2000.

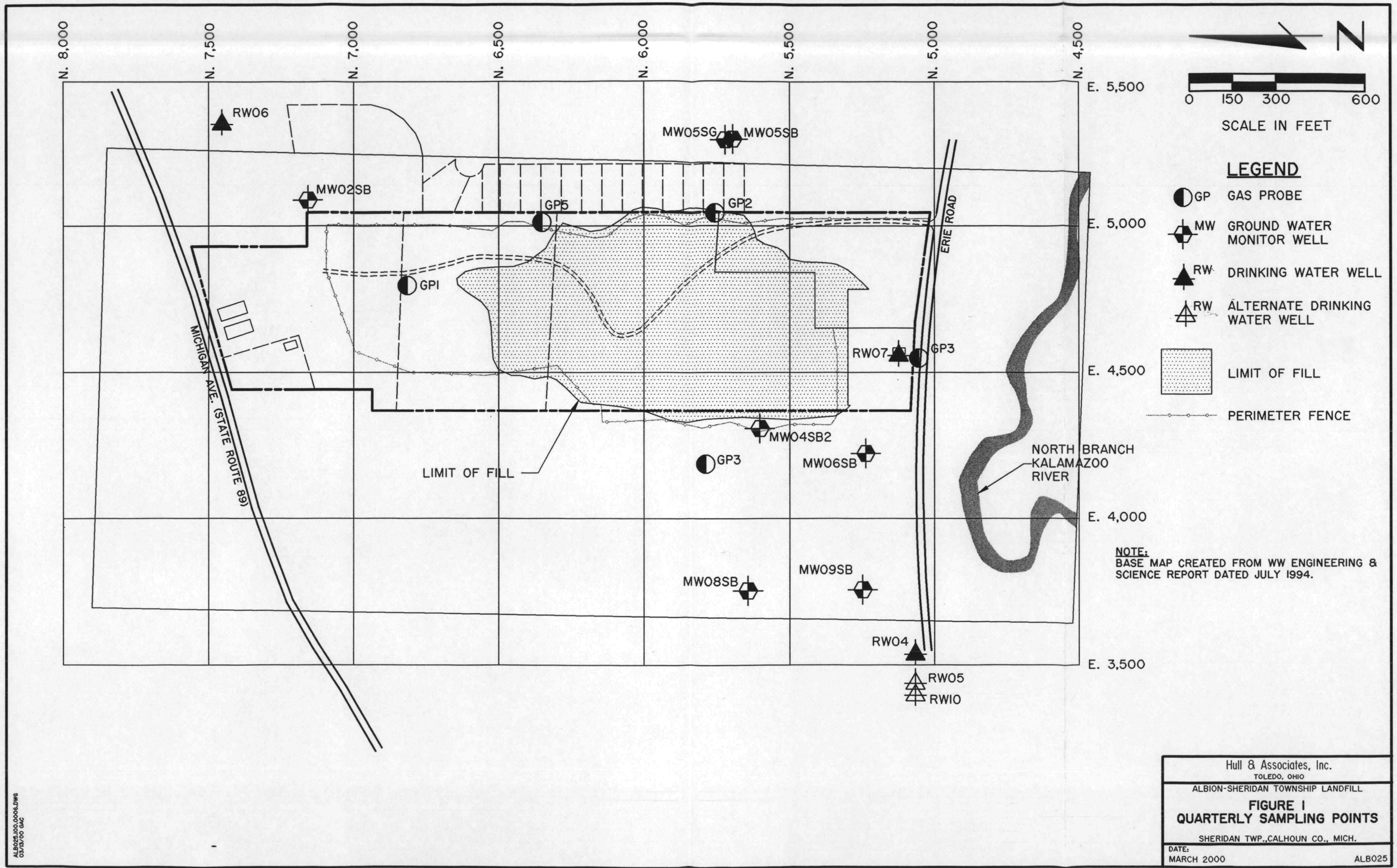
5.0 SUMMARY

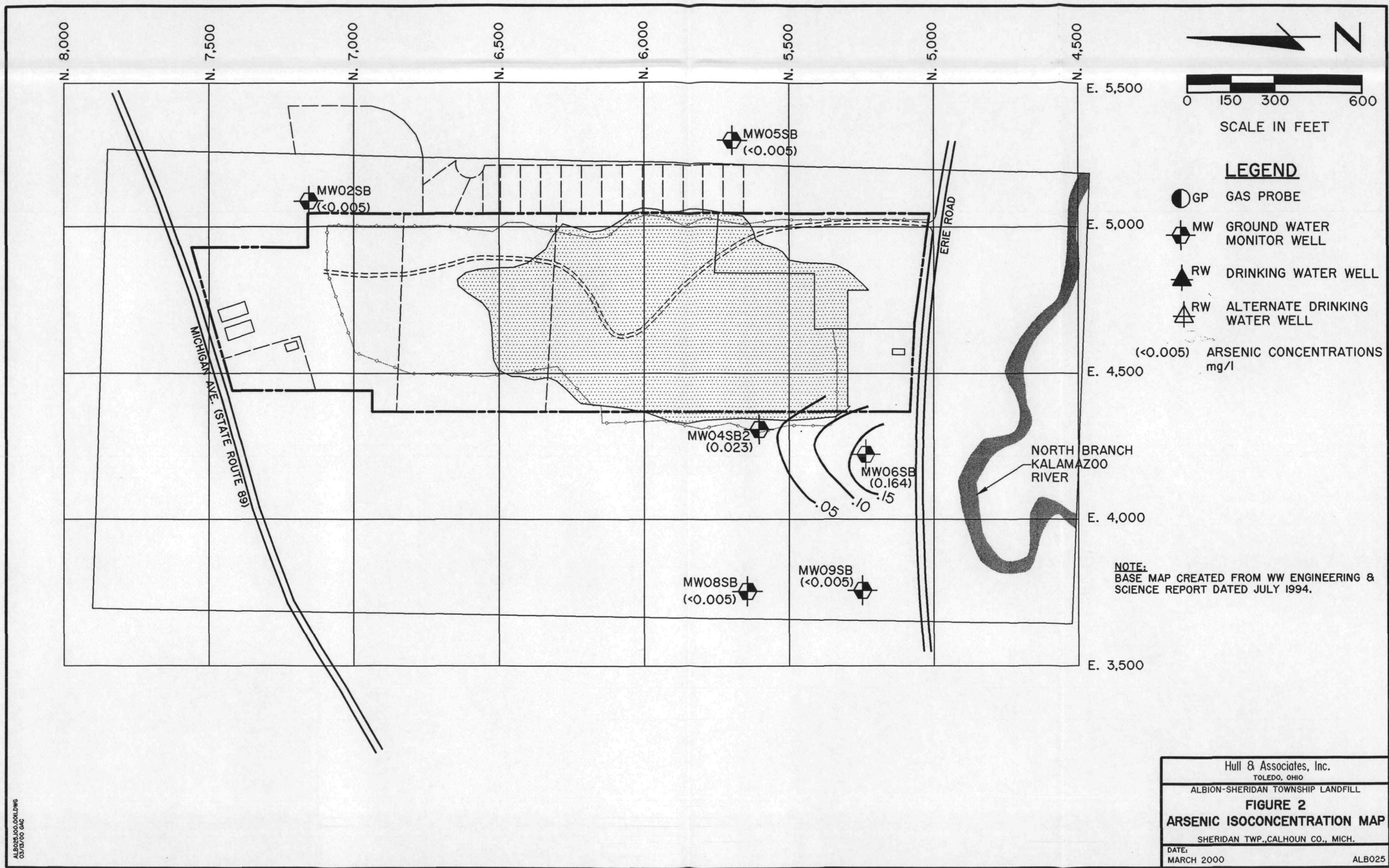
The information in this report of ground-water quality (March 2000) is provided to comply with conditions stated in the approved O&M Plan developed by *SECOR* International Incorporated (February 1999).

All sampling and analysis activities were completed in accordance with the O&M Plan. The submittal is 75 days from the end of the quarter in which the sampling occurred as stated in section 3.2.10 of the O&M Plan. This report represents Year #1, Quarter #1, and therefore the submittal deadline is March 15, 2000.

This report also incorporates the findings of required explosive gas monitoring data. As with ground-water discussed above, all sampling and analysis was conducted in accordance with the approved O&M Plan and therefore the submittal deadline is also March 15, 2000.

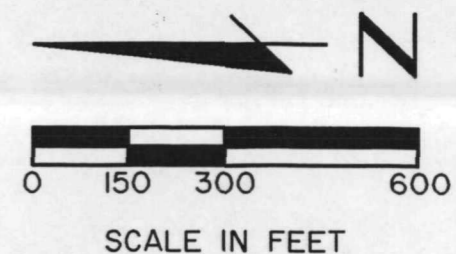
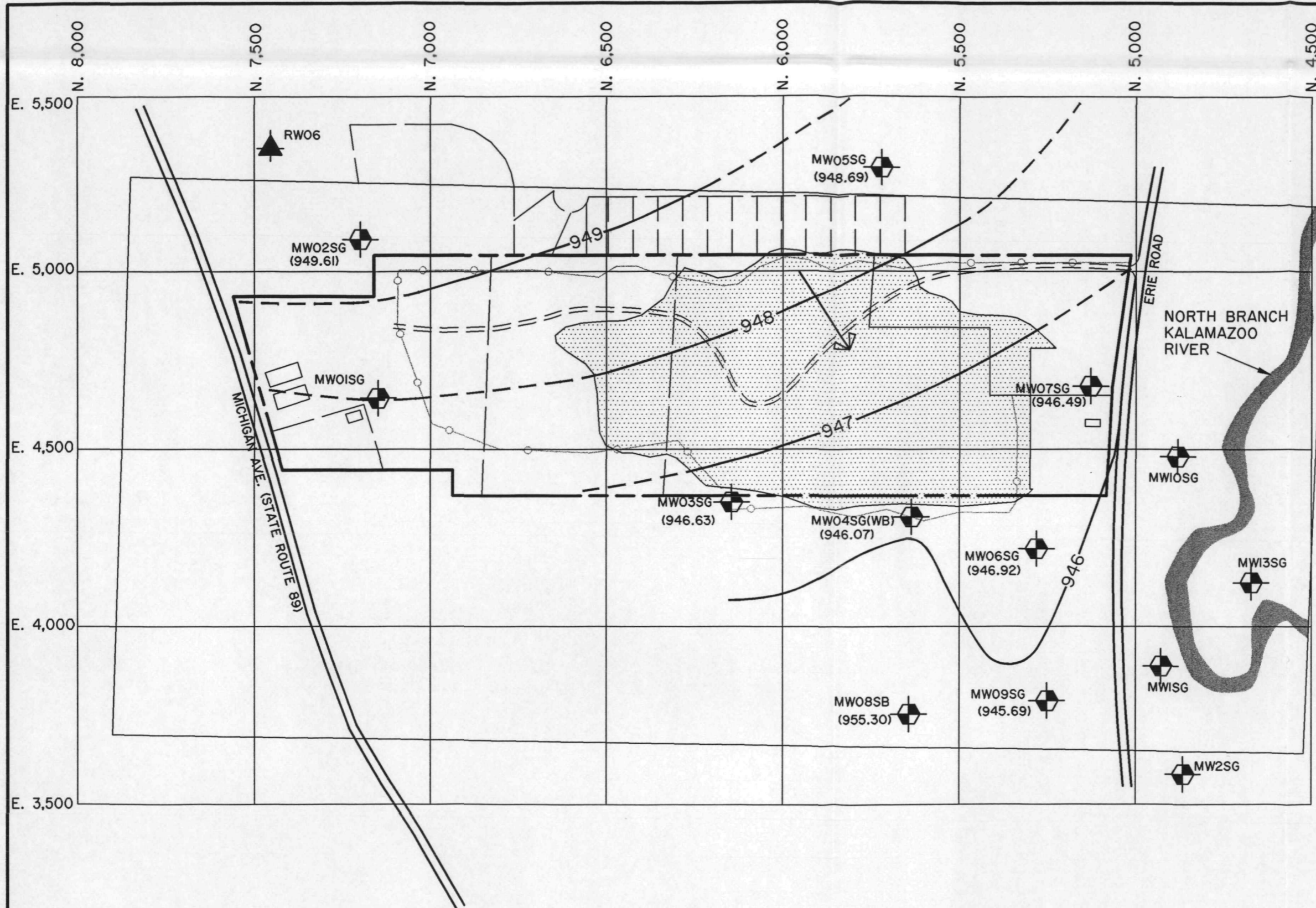
The approach and findings of the landfill gas emissions model are also provided in this report. This emissions study was completed to comply with





ALB025.100.001.DWG
03/13/00 GAC

Hull & Associates, Inc. TOLEDO, OHIO	
ALBION-SHERIDAN TOWNSHIP LANDFILL	
FIGURE 2	
ARSENIC ISOCONCENTRATION MAP	
SHERIDAN TWP., CALHOUN CO., MICH.	
DATE: MARCH 2000	ALB025



LEGEND

- GP GAS PROBE
- MW GROUND WATER MONITOR WELL
- RW DRINKING WATER WELL
- RW ALTERNATE DRINKING WATER WELL
- POTENTIOMETRIC SURFACE CONTOUR
- FLOW DIRECTION

WELL I.D.	GROUND-WATER ELEV. (FT/USGS)
MW01SG	---
MW02SG	949.61
MW03SG	946.63
MW04SG(WB)	946.07
MW05SG	948.69
MW06SG	946.92
MW07SG	946.49
MW08SG	955.30
MW09SG	945.69

AVERAGE HYDRAULIC GRADIENT = 0.0025 ft/ft
 MAJOR FLOW DIRECTION = SOUTHWEST
 CONTOUR GRADIENT = 1.0 ft

NOTE:
 BASE MAP CREATED FROM WW ENGINEERING &
 SCIENCE REPORT DATED JULY 1994.

Hull & Associates, Inc.
 TOLEDO, OHIO

ALBION-SHERIDAN TOWNSHIP LANDFILL

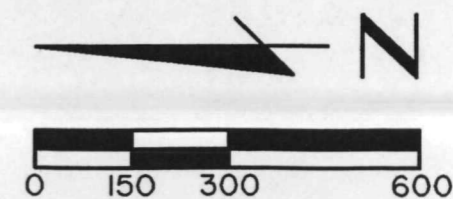
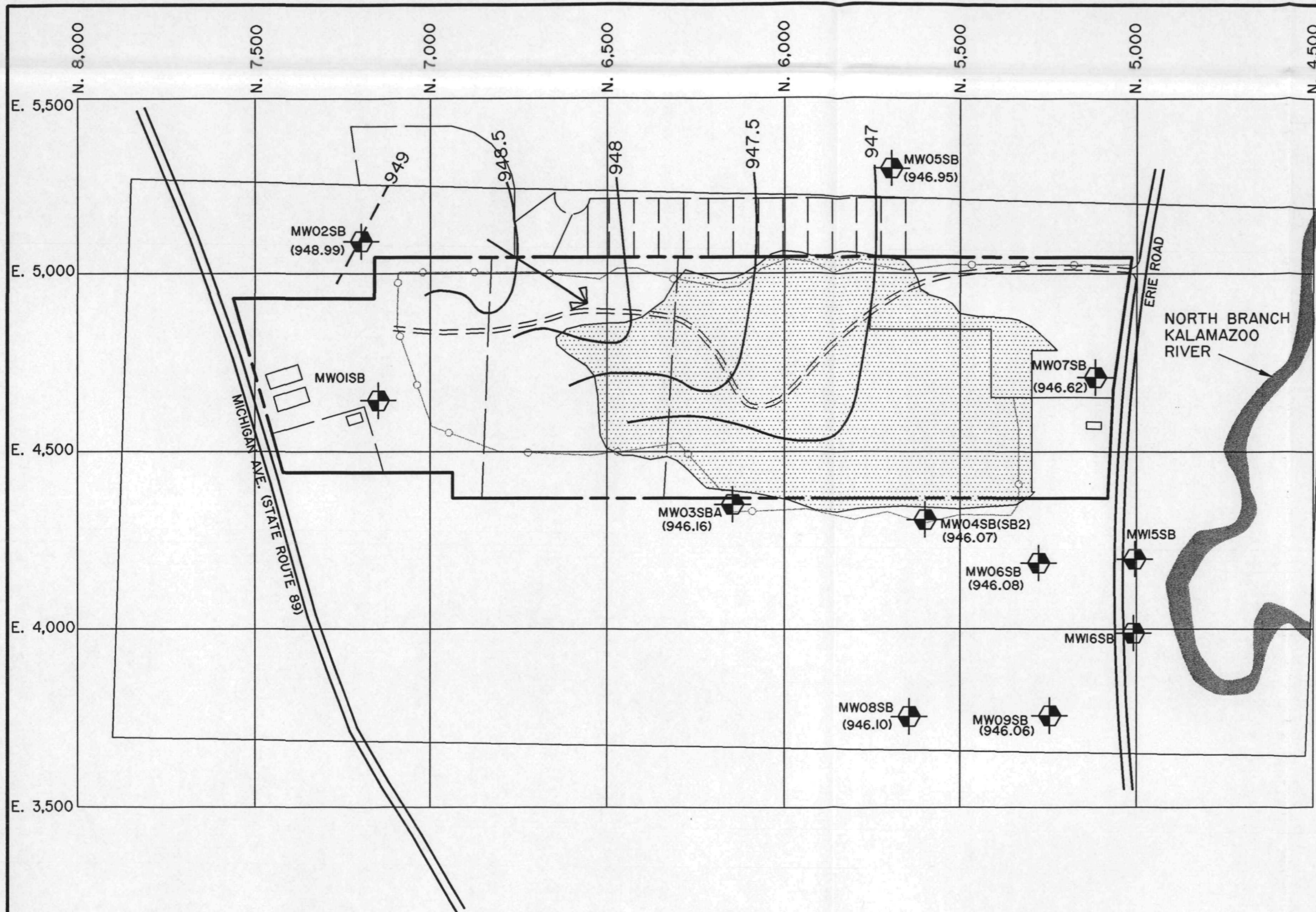
FIGURE 3A

POTENTIOMETRIC SURFACE MAP FOR UNCONSOLIDATED SATURATED UNIT

SHERIDAN TWP., CALHOUN CO., MICH.

DATE:
 MARCH 2000

ALB025



SCALE IN FEET

LEGEND

- GP GAS PROBE
- MW GROUND WATER MONITOR WELL
- RW DRINKING WATER WELL
- RW ALTERNATE DRINKING WATER WELL

POTENTIOMETRIC SURFACE CONTOUR

FLOW DIRECTION

WELL I.D.	GROUND-WATER ELEV. (FT/USGS)
MW01SB	---
MW02SB	948.99
MW03SBA	946.16
MW04SB(SB2)	946.07
MW05SB	946.95
MW06SB	946.08
MW07SB	946.62
MW08SB	946.10
MW09SB	946.06

AVERAGE HYDRAULIC GRADIENT = 0.0016 ft/ft
 MAJOR FLOW DIRECTION = SOUTHWEST
 CONTOUR GRADIENT = 0.5 ft

NOTE:
 BASE MAP CREATED FROM WW ENGINEERING &
 SCIENCE REPORT DATED JULY 1994.

ALB025.100.0008.DWG
 03/13/00 GAC

Hull & Associates, Inc.
 TOLEDO, OHIO

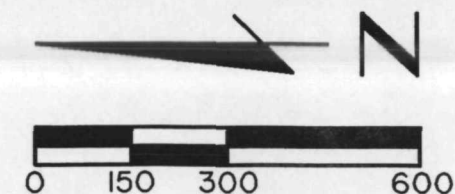
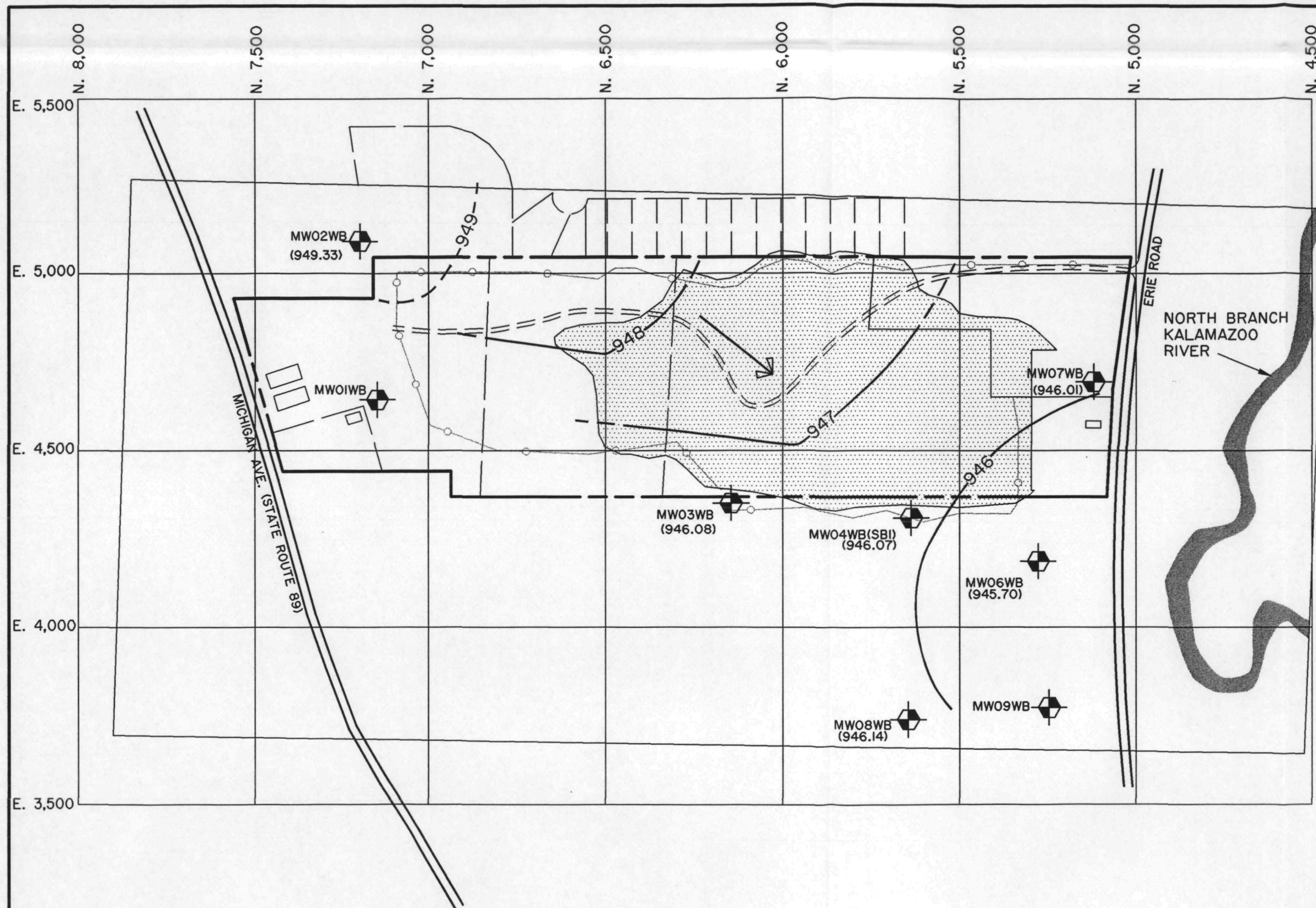
ALBION-SHERIDAN TOWNSHIP LANDFILL

FIGURE 3B POTENTIOMETRIC SURFACE MAP FOR SHALLOW BEDROCK UNIT

SHERIDAN TWP., CALHOUN CO., MICH.

DATE:
 MARCH 2000

ALB025



SCALE IN FEET

LEGEND

- GP GAS PROBE
- MW GROUND WATER MONITOR WELL
- RW DRINKING WATER WELL
- RW ALTERNATE DRINKING WATER WELL
- POTENTIOMETRIC SURFACE CONTOUR
- FLOW DIRECTION

WELL I.D.	GROUND-WATER ELEV. (FT/USGS)
MW01WB	---
MW02WB	949.33
MW03WB	946.08
MW04WB(SBI)	946.07
MW05WB	---
MW06WB	945.70
MW07WB	946.01
MW08WB	946.14
MW09WB	---

AVERAGE HYDRAULIC GRADIENT = 0.0019 ft/ft
 MAJOR FLOW DIRECTION = SOUTHWEST
 CONTOUR GRADIENT = 1.0 ft

NOTE:
 BASE MAP CREATED FROM WW ENGINEERING &
 SCIENCE REPORT DATED JULY 1994.

Hull & Associates, Inc.
 TOLEDO, OHIO

ALBION-SHERIDAN TOWNSHIP LANDFILL

FIGURE 3C
POTENTIOMETRIC SURFACE MAP
FOR WEATHERED BEDROCK UNIT
 SHERIDAN TWP., CALHOUN CO., MICH.

DATE:
 MARCH 2000

ALB025

ATTACHMENT A

Laboratory Analytical and Quality Control Report,
Ground-water Monitor Well Field Data Sheets,
Chain of Custody, and Request for Analysis Forms

ATTACHMENT A-1: Laboratory Analytical and Quality
Control Report for the October 1999
Sampling Event

ATTACHMENT A-2: Ground-water Monitor Well Field
Data Sheets for the October 1999
Sampling Event

ATTACHMENT A-3: Chain of Custody and Request for
Analysis Forms for the October 1999
Sampling Event

ATTACHMENT A-1

Laboratory Analytical and Quality Control Report

Case Narrative

Page 1

Job Number: 99.18965
Date Reported: 11/18/1999
Project: ALB025
Phase: 99.MNT

Enclosed with this case narrative are the analytical report, QC summary report and the "CLP Like" data package for all analytical work performed in support of this project.

- a). This report is issued to Hull & Associates on 11/24/1999.
- b). Analyses were conducted on Monitoring wells designated with (MW) descriptions.

Analyses conducted on Ground water monitoring wells were as follows:

Ammonia	Method EPA 350.1
Total Dissolved Solids	Method EPA 160.1
Dissolved Metals (As)	Method 6020

- c). There were no analytical deviations from intended strategy.
- d). Laboratory batch numbers are found in the analytical data report for each analysis. Prep batch numbers refer to those parameters requiring preliminary preparation procedures and are used to define a set of samples that are prepped together. Run batch numbers refer to analytical analysis runs in which like samples are run together. There are QC samples for both prep batch control as well as run batch control.
- e). For this analytical Job number there were a total of 6 samples.
 - 5 samples were collected from Groundwater Monitoring Wells.
 - 1 sample was a Field Blank representing all Analytical parameters in the Job.
- f). Please refer to analytical SOPs submitted from the Dayton Division of TestAmerica, Inc. for the appropriate QC procedures and referenced control criteria.

Page 2

Job Number: 99.18965
Date Reported: 11/18/1999
Project: ALB025
Phase: 99.MNT

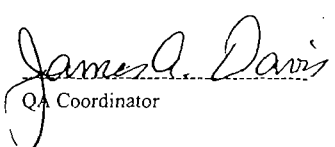
- g). The laboratory report consists of two parts.

The first part of the report is the analytical data which includes (for each sample): sample number, sample description, date and time collected, Analysis conducted, analytical result, any qualifying flags, units of measure, data analyzed, prep batch number, run batch number, base reporting limit, analyst initials performing the analysis and the analytical method reference.

The second part of the report is the Quality Control Summary Report which includes (for each sample, where applicable): Instrument Continuing Calibration Verification checks (CCV), Method/Run blanks (MB), Laboratory Control Standards (LCS), Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Duplicates (DUP). These QC summaries do not represent ALL QC performed in support of analytical data. Please refer to copied raw data in the "CLP Like" data package.

- h). The analytical data submitted with this case narrative was performed for Hull & Associates, Inc. Project ID: ALB025 in Phase 99.MNT.
- i). Samples were received on October 30, 1999 at 09:20 hours from Fed-ex. The Fed-ex airbill number is 813906427035. The temperature of the samples on receipt was 2 degrees C. All samples were received intact with a completed Chain-of-Custody.
- j). All analytical holding times were observed for the analytes on this job.
- k). No analytical difficulties of interest were noted.
- l). All quality control checks analyzed with the samples associated with this job were in control.


Project Manager


QA Coordinator

ANALYTICAL AND QUALITY CONTROL REPORT

PAGE 2 of 11

William G. Petruzzini
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18965

Enclosed is the Analytical and Quality Control reports for the following samples submitted to the Dayton Division of TestAmerica, Inc. for analysis:

Sample Number	Sample Description	Date Taken	Date Received
569971	ALB025-MW05SB-G102799-340	10/27/1999	10/30/1999
569972	ALB025-MW02SB-G102799-340	10/27/1999	10/30/1999
569973	ALB025-FB1-W102799-340	10/27/1999	10/30/1999
569974	ALB025-MW04SB-G102899-340	10/28/1999	10/30/1999
569975	ALB025-MW08SB-G102899-340	10/28/1999	10/30/1999
569976	ALB025-MW09SB-G102899-340	10/28/1999	10/30/1999

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TestAmerica, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.

Enclosure


Approved By

3601 SOUTH DIXIE DRIVE / DAYTON, OH 45439 / 937-294-6856 / FAX 937-294-7816

ANALYTICAL REPORT

William G. Petruzzini
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18965

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Unit	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO.			SAMPLE DESCRIPTION			DATE/TIME TAKEN		
569971			ALB025-MW05SB-G102799-340			10/27/1999 15:50		
Nitrogen, Ammonia Direct	0.13	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1	
Solids, Total Dissolved	421	mg/L	11/01/1999	988	<50	bjm	EPA 160.1	
Conductivity (On Site)	725	umhos/cm	11/02/1999	143		kbh		
eH (On Site)	-19	millivts	10/27/1999	3		kbh		
Oxygen, Dissolved (On Site)	0.67	mg/L	10/27/1999	32		kbh		
pH (On Site)	7.45	S.U.	10/27/1999	394		kbh		
Temperature (On Site)	10.7	Degree C	10/27/1999	152		kbh		
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete	ekh	SW 6020	
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/03/1999	541	<0.0050	ekh	SW 6020	
SAMPLE NO.			SAMPLE DESCRIPTION			DATE/TIME TAKEN		
569972			ALB025-MW02SB-G102799-340			10/27/1999 14:10		

Nitrogen, Ammonia Direct	<0.05	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1
Solids, Total Dissolved	578	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
Conductivity (On Site)	1083	umhos/cm	11/02/1999	143		kbh	
eH (On Site)	-18	millivts	10/27/1999	3		kbh	
Oxygen, Dissolved (On Site)	0.0	mg/L	10/27/1999	32		kbh	

3601 SOUTH DIXIE DRIVE / DAYTON, OH 45439 / 937-294-6856 / FAX 937-294-7816

ANALYTICAL REPORT

William G. Petruzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18965

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO. 569972			SAMPLE DESCRIPTION ALB025-MW02SB-G102799-340			DATE/TIME TAKEN 10/27/1999 14:10		
pH (On Site)		7.41	S.U.	10/27/1999	394		kbh	
Temperature (On Site)		10.8	Degree C	10/27/1999	152		kbh	
ICPMS DISSOLVED METALS		Complete		11/03/1999	380	Complete	ekh	SW 6020
Arsenic, Dissolved, ICPMS		<0.0050	mg/L	11/03/1999	541	<0.0050	ekh	SW 6020

SAMPLE NO. 569973			SAMPLE DESCRIPTION ALB025-FB1-W102799-340			DATE/TIME TAKEN 10/27/1999 18:45		
Nitrogen, Ammonia Direct		<0.05	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1
Solids, Total Dissolved		<50	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
ICPMS DISSOLVED METALS		Complete		11/03/1999	380	Complete	ekh	SW 6020
Arsenic, Dissolved, ICPMS		<0.0050	mg/L	11/03/1999	541	<0.0050	ekh	SW 6020

ANALYTICAL REPORT

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3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18965

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO. 569974			SAMPLE DESCRIPTION ALB025-MW04SB-G102899-340			DATE/TIME TAKEN 10/28/1999 12:15		
Nitrogen, Ammonia Direct		29.0	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1
Solids, Total Dissolved		652	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
Conductivity (On Site)		1366	umhos/cm	11/02/1999	143		kbh	
pH (On Site)		-5	millivts	10/28/1999	2		kbh	
Oxygen, Dissolved (On Site)		0.87	mg/L	10/28/1999	33		kbh	
pH (On Site)		7.14	S.U.	10/28/1999	395		kbh	
Temperature (On Site)		11.8	Degree C	10/28/1999	153		kbh	
ICPMS DISSOLVED METALS		Complete		11/03/1999	380	Complete	ekh	SW 6020
Arsenic, Dissolved, ICPMS		0.023	mg/L	11/03/1999	541	<0.005	ekh	SW 6020

SAMPLE NO. 569975			SAMPLE DESCRIPTION ALB025-MW08SB-G102899-340			DATE/TIME TAKEN 10/28/1999 15:15		
Nitrogen, Ammonia Direct		0.52	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1
Solids, Total Dissolved		558	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
Conductivity (On Site)		928	umhos/cm	11/02/1999	143		kbh	
pH (On Site)		-10	millivts	10/28/1999	2		kbh	
Oxygen, Dissolved (On Site)		0.48	mg/L	10/28/1999	33		kbh	

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ANALYTICAL REPORT

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11/18/1999

Job Number: 99.18965

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analysis Initials	Method Reference
SAMPLE NO.								DATE/TIME TAKEN
569975								10/28/1999 15:15
SAMPLE DESCRIPTION								
ALB025-MW08SB-G102899-340								

pH (On Site)	7.25	S.U.	10/28/1999	395			kbh	
Temperature (On Site)	11.4	Degree C	10/28/1999	153			kbh	
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete		ekh	SW 6020
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/03/1999	541	<0.0050		ekh	SW 6020

SAMPLE NO.								DATE/TIME TAKEN
569976								10/28/1999 16:20
SAMPLE DESCRIPTION								
ALB025-MW09SB-G102899-340								

Nitrogen, Ammonia Direct	13.0	mg/L	11/13/1999	984	<0.05		imp	EPA 350.1
Solids, Total Dissolved	656	mg/L	11/01/1999	988	<50		bjm	EPA 160.1
Conductivity (On Site)	1239	umhos/cm	11/02/1999	143			kbh	
pH (On Site)	-6	millivts	10/28/1999	2			kbh	
Oxygen, Dissolved (On Site)	0.48	mg/L	10/28/1999	33			kbh	
pH (On Site)	7.17	S.U.	10/28/1999	395			kbh	
Temperature (On Site)	11.3	Degree C	10/28/1999	153			kbh	
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete		ekh	SW 6020
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/03/1999	541	<0.0050		ekh	SW 6020

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QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION

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11/18/1999

Job Number: 99.18965

Analyte	Prep Batch Number	Run Batch Number	CCV True Concentration	CCV Concentration Observed	Flag	Units	Percent Recovery
Nitrogen, Ammonia Direct		984	0.50	0.51		mg/L	102
Arsenic, Dissolved, ICPMS		541	0.050	0.050		mg/L	100

CCV - Continuing Calibration Verification

**QUALITY CONTROL REPORT
BLANKS**

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11/18/1999

Job Number: 99.18965

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis	Flag	Units	Date Prepped
Nitrogen, Ammonia Direct		984	<0.05		mg/L	
Solids, Total Dissolved		988	<50		mg/L	
Arsenic, Dissolved, ICPMMS		541	<0.0050		mg/L	

Advisory Control Limits for Blanks:

Metals/Wet Chemistry/ Conventional/GC - all compounds should be less than the Reporting Limit.
GC/MS - Semi-Volatiles - all compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the reporting limit.
Volatiles - Toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit. All other volatile compounds should be less than the Reporting Limit.

**QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD**

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11/18/1999

Job Number: 99.18965

Analyte	Prep Batch Number	Run Batch Number	LCS True Concentration	LCS Concentration Observed	Units	LCS % Recovery	Flag
Solids, Total Dissolved		988	330.	312	mg/L	95	

LCS - Laboratory Control Standard

Advisory Control Limits: Inorganics statistical limits are established at the mean +/- 3 standard deviations.
If statistical limits are not established the LCS should be 80 - 120 % recovery.

**QUALITY CONTROL REPORT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE**

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11/18/1999

Job Number: 99.18965

Analyte	Prep	Run	Matrix	Sample	Spike	Units	Rec.	MSD	MSD	Units	Rec.	RPD	Flag
	Batch	Batch	Spike					Result	Spike				
	Number	Number	Result	Result	Amount			Result	Amount				
Nitrogen, Ammonia Direct		984	0.53	0.13	0.50	mg/L	80	0.52	0.50	mg/L	78	1.9	
Arsenic, Dissolved, ICPMS		541	0.230	<0.0050	0.200	mg/L	115	0.227	0.200	mg/L	114	1.3	

NOTE: Matrix Spike Samples may not be samples from this job.

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference

**QUALITY CONTROL REPORT
DUPLICATES**

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11/18/1999

Job Number: 99.18965

Analyte	Prep	Run	Original	Duplicate	Units	RPD	Flag
	Batch	Batch					
	Number	Number	Analysis	Analysis			
Solids, Total Dissolved		988	605	617	mg/L	2.0	

NOTE: Spikes and Duplicates may not be samples from this job.

RPD = Relative Percent Difference

Advisory Control Limits for Duplicates - RPD should be less than 20.

QUALITY CONTROL FLAG DEFINITIONS

Job Number: 99.18965

(*) Indicates an out-of-control QC. The analytical data was reported based on other supporting quality control information.

(Note) Indicates to review the notes and comments section of the analytical report as there is additional information concerning this analytical result.

(MS) Indicates that the Matrix Spike (MS) was out of statistical advisory limits.

(MSD) Indicates that the Matrix Spike Duplicate (MSD) was out of statistical advisory limits.

(RPD) Indicates that the Relative Percent Difference (RPD) for the MS/MSD pair was outside of statistical advisory limits.

(SS) Indicates that the MS and MSD were out of statistical advisory limits.

(SSR) Indicates that the MS, MSD and RPD were out of statistical advisory limits.

(MSR) Indicates that the MS and RPD were out of statistical advisory limits.

(MSDR) Indicates that the MSD and RPD were out of statistical advisory limits.

(DL) Indicates that the MS and MSD were diluted out and the percent recoveries of the spikes could not be calculated.

(LS) Indicates that statistical accuracy and precision data is not available for spike concentrations which are $< 1/4$ of the sample amount. Care should be used in interpreting this data.

(J) Indicates estimated concentration due to internal standard areas or surrogate recoveries outside of control limits. A sample matrix effect is usually indicated.

(DW) Indicates Dry Weight.

Analytical Reporting Limits

The reporting limits listed for non-aqueous samples in the analytical report section are Practical Quantitation Limits (PQLs). These PQLs are based upon a typical standard weight used for a non-aqueous sample. The reporting limit for a sample may be different from the PQL listed depending upon the actual weight of sample used, the samples moisture content and any dilutions used during the analysis.

3601 SOUTH DIXIE DRIVE / DAYTON, OH 45439 / 937-294-6856 / FAX: 937-294-7816

Case Narrative

Page 1

Job Number: 99.18964

Date Reported: 11/18/1999

Project: ALB025

Phase: 99.MNT

Enclosed with this case narrative are the analytical report, QC summary report and the "CLP Like" data package for all analytical work performed in support of this project.

a). This report is issued to Hull & Associates on 11/24/1999.

b). Analyses were conducted on both Drinking water well samples (RW04) sampling designations as well as Monitoring wells designated with (MW) descriptions.

Analyses conducted on Drinking water wells were as follows:

Ammonia	Method EPA 350.1
Dissolved Metals (Al, Sb, As, Co, Mn, Ni)	Method 6020
Volatiles (Benzene, Vinyl chloride)	Method 8260A
1,2-Dibromo-3-chloropropane (DBCP)	Method 504.1

Analyses conducted on Ground water monitoring wells were as follows:

Ammonia	Method EPA 350.1
Total Dissolved Solids	Method EPA 160.1
Dissolved Metals (As)	Method 6020

c). There were no analytical deviations from intended strategy.

d). Laboratory batch numbers are found in the analytical data report for each analysis. Prep batch numbers refer to those parameters requiring preliminary preparation procedures and are used to define a set of samples that are prepped together. Run batch numbers refer to analytical analysis runs in which like samples are run together. There are QC samples for both prep batch control as well as run batch control.

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Job Number: 99.18964

Date Reported: 11/18/1999

Project: ALB025

Phase: 99.MNT

e). For this analytical Job number there were a total of 7 samples.

3 samples were collected from Drinking Water Wells.

(Two of these samples are for the MS and MSD)

2 samples were collected from Groundwater Monitoring Wells.

(One of these samples is a Field Duplicate)

1 sample was a Field Blank representing all Analytical parameters in the Job.

1 sample was a Trip Blank for the Volatile analytes (VOCs, DBCP)

f). Please refer to analytical SOPs submitted from the Dayton Division of TestAmerica, Inc. for the appropriate QC procedures and referenced control criteria.

g). The laboratory report consists of two parts.

The first part of the report is the analytical data which includes (for each sample): sample number, sample description, date and time collected, Analysis conducted, analytical result, any qualifying flags, units of measure, data analyzed, prep batch number, run batch number, base reporting limit, analyst initials performing the analysis and the analytical method reference.

The second part of the report is the Quality Control Summary Report which includes (for each sample, where applicable): Instrument Continuing Calibration Verification checks (CCV), Method/Run blanks (MB), Laboratory Control Standards (LCS), Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Duplicates (DUP). These QC summaries do not represent ALL QC performed in support of analytical data. Please refer to copied raw data in the "CLP Like" data package.

h). The analytical data submitted with this case narrative was performed for Hull & Associates, Inc. Project ID: ALB025 in Phase 99.MNT.

i). Samples were received on October 30, 1999 at 09:20 hours from Fed-ex. The Fed-ex airbill number is 813906427035. The temperature of the samples on receipt was 3 degrees C. All samples were received intact with a completed Chain-of-Custody.

j). All analytical holding times were observed for the analytes on this job.

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Job Number: 99.18964


Date Reported: 11/18/1999

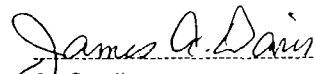
Project: ALB025

Phase: 99.MNT

k). A bottle labeling error and analyst confusion on how to run and report the batch MS/MSD using the sample descriptions logged into the computer system caused the re-analysis of sample numbers 569964, 569965 and 569966 for Ammonia.

l). All quality control checks analyzed with the samples associated with this job were in control.


Project Manager


Coordinator

ANALYTICAL AND QUALITY CONTROL REPORT

PAGE 2 of 14

William G. Petruzzini
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11/18/1999

Job Number: 99.18964

William G. Petruzzini
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11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

Enclosed is the Analytical and Quality Control reports for the following samples submitted to the Dayton Division of TestAmerica, Inc. for analysis:

Sample Number	Sample Description	Date Taken	Date Received
569964	ALB025-RW04-G102899-340	10/28/1999	10/30/1999
569965	ALB025-RW04-G102899MS-340	10/28/1999	10/30/1999
569966	ALB025-RW04-G102899MSD-340	10/28/1999	10/30/1999
569967	ALB025-MW06SB-G102899A-340	10/28/1999	10/30/1999
569968	ALB025-MW06SB-G102899B-340	10/28/1999	10/30/1999
569969	ALB025-FB2-W102899-340	10/28/1999	10/30/1999
569970	ALB025-TB1-W102899-340	10/28/1999	10/30/1999

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TestAmerica, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.

Enclosure

Kenneth A. Hend
Approved By

ANALYTICAL REPORT

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO.			SAMPLE DESCRIPTION			DATE/TIME TAKEN		
569964			ALB025-RW04-G102899-340			10/28/1999 18:45		
Nitrogen, Ammonia Direct	0.23	mg/L	11/15/1999	986	<0.05	imp	EPA 350.1	
Conductivity (On Site)	709	umhos/cm	11/02/1999	143		kbh		
eH (On Site)	-21	millivts	10/28/1999	2		kbh		
Oxygen, Dissolved (On Site)	6.08	mg/L	10/28/1999	33		kbh		
pH (On Site)	7.44	S.U.	10/28/1999	392		clt		
Temperature (On Site)	12.8	Degree C	10/28/1999	153		kbh		
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete	ekh	SW 6020	
Aluminum, Dissolved, ICPMS	<0.100	mg/L	11/03/1999	578	<0.100	ekh	SW 6020	
Antimony, Diss, ICPMS	<0.0050	mg/L	11/03/1999	553	<0.0050	ekh	SW 6020	
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/03/1999	541	<0.0050	ekh	SW 6020	
Cobalt, Diss, ICPMS	<0.010	mg/L	11/03/1999	567	<0.010	ekh	SW 6020	
Manganese, Dissolved, ICPMS	0.082	mg/L	11/03/1999	599	<0.020	ekh	SW 6020	
Nickel, Dissolved, ICPMS	<0.050	mg/L	11/03/1999	571	<0.050	ekh	SW 6020	
VOLATILE COMPOUNDS - 8260 (AQ)								
8260 - SW846 (AQ)	Complete		11/05/1999	2140	Complete	jpf		
Benzene	<5.0	ug/L	11/05/1999	2140	<5.0	jpf	SW 8260A	
Vinyl Chloride	<1.0	ug/L	11/05/1999	2140	<1.0	jpf	SW 8260A	
Surrogate:d4-1,2-DCE	100	%	11/05/1999	2140		jpf	SW 8260A	
Surrogate:Dibromofluoromethane	104	%	11/05/1999	2140		jpf	SW 8260A	
Surrogate:Toluene-d8	93	%	11/05/1999	2140		jpf	SW 8260A	
Surrogate:Bromofluorobenzene	97	%	11/05/1999	2140		jpf	SW 8260A	
VOLATILES - 504.1								
1,2-Dibromo-3-chloropropane	<1	ug/L	11/03/1999	288	<1	bmh	EPA 504.1	

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ANALYTICAL REPORT

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Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date	Prep	Run	Reporting	Analyst	Limit	Initials	Method Reference
			Analyzed	Batch	Batch					
SAMPLE NO.	SAMPLE DESCRIPTION					DATE/TIME TAKEN				
569965	ALB025-RW04-G102899MS-340					10/28/1999 18:45				
Nitrogen, Ammonia Direct	92	%	11/15/1999		986	<0.05	imp	EPA 350.1		
Conductivity (On Site)	709	umhos/cm	11/02/1999		143		kbh			
eH (On Site)	-21	millivts	10/28/1999		2		kbh			
Oxygen, Dissolved (On Site)	6.08	mg/L	10/28/1999		33		kbh			
pH (On Site)	7.44	S.U.	10/28/1999		395		kbh			
Temperature (On Site)	12.8	Degree C	10/28/1999		153		kbh			
ICPMS DISSOLVED METALS	Complete		11/03/1999		380	Complete	ekh	SW 6020		
Aluminum, Dissolved, ICPMS	96	%	11/03/1999		578	<0.100	ekh	SW 6020		
Antimony, Diss, ICPMS	104	%	11/03/1999		553	<0.0050	ekh	SW 6020		
Arsenic, Dissolved, ICPMS	115	%	11/03/1999		541	<0.0050	ekh	SW 6020		
Cobalt, Diss, ICPMS	94	%	11/03/1999		567	<0.010	ekh	SW 6020		
Manganese, Dissolved, ICPMS	82	%	11/03/1999		599	<0.020	ekh	SW 6020		
Nickel, Dissolved, ICPMS	94	%	11/03/1999		571	<0.050	ekh	SW 6020		
VOLATILE COMPOUNDS - 8260 (AQ)										
8260 - SW846 (AQ)	Complete		11/05/1999		2140	Complete	jpf			
Benzene	98	%	11/05/1999		2140	<5.0	jpf	SW 8260A		
Vinyl Chloride	105	%	11/05/1999		2140	<1.0	jpf	SW 8260A		
Surrogate:d4-1,2-DCE	104	%	11/05/1999		2140		jpf	SW 8260A		
Surrogate:Dibromofluoromethane	103	%	11/05/1999		2140		jpf	SW 8260A		
Surrogate:Toluene-d8	97	%	11/05/1999		2140		jpf	SW 8260A		
Surrogate:Bromofluorobenzene	99	%	11/05/1999		2140		jpf	SW 8260A		
VOLATILES - 504.1										
1,2-Dibromo-3-chloropropane	96	%	11/03/1999		288	<1.0	bmh	EPA 504.1		

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PAGE 4 of 14

ANALYTICAL REPORT

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11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

SAMPLE NO.	SAMPLE DESCRIPTION	Result	Flag	Units	Date	Prep	Run	Reporting	Analyst	Method Reference
					Analyzed	Batch	Batch		Limit	
569966	ALB025-RW04-G102899MSD-340									
DATE/TIME TAKEN 10/28/1999 18:45										
Nitrogen, Ammonia Direct	92	%			11/15/1999		986	<0.05	imp	EPA 350.1
Conductivity (On Site)	709	umhos/cm			11/02/1999		143		kbh	
eH (On Site)	-21	millivts			10/28/1999		2		kbh	
Oxygen, Dissolved (On Site)	6.08	mg/L			10/28/1999		33		kbh	
pH (On Site)	7.44	S.U.			10/28/1999		395		kbh	
Temperature (On Site)	12.8	Degree C			10/28/1999		153		kbh	
ICPMS DISSOLVED METALS	Complete				11/03/1999		380	Complete	ekh	SW 6020
Aluminum, Dissolved, ICPMS	94	%			11/03/1999		578	<0.100	ekh	SW 6020
Antimony, Diss, ICPMS	104	%			11/03/1999		553	<0.0050	ekh	SW 6020
Arsenic, Dissolved, ICPMS	114	%			11/03/1999		541	<0.0050	ekh	SW 6020
Cobalt, Diss, ICPMS	94	%			11/03/1999		567	<0.010	ekh	SW 6020
Manganese, Dissolved, ICPMS	82	%			11/03/1999		599	<0.020	ekh	SW 6020
Nickel, Dissolved, ICPMS	96	%			11/03/1999		571	<0.050	ekh	SW 6020
VOLATILE COMPOUNDS - 8260 (AQ)										
8260 - SW846 (AQ)	Complete				11/05/1999		2140	Complete	jpf	
Benzene	88	%			11/05/1999		2140	<5.0	jpf	SW 8260A
Vinyl Chloride	121	%			11/05/1999		2140	<1.0	jpf	SW 8260A
Surrogate:d4-1,2-DCE	105	%			11/05/1999		2140		jpf	SW 8260A
Surrogate:Dibromofluoromethane	103	%			11/05/1999		2140		jpf	SW 8260A
Surrogate:Toluene-d8	96	%			11/05/1999		2140		jpf	SW 8260A
Surrogate:Bromofluorobenzene	101	%			11/05/1999		2140		jpf	SW 8260A
VOLATILES - 504.1										
1,2-Dibromo-3-chloropropane	105	%			11/03/1999		288	<1.0	bmh	EPA 504.1

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ANALYTICAL REPORT

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11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
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SAMPLE NO.	SAMPLE DESCRIPTION	DATE/TIME TAKEN
569967	ALB025-MW06SB-G102899A-340	10/28/1999 18:00

Nitrogen, Ammonia Direct	26.0	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1
Solids, Total Dissolved	605	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
Conductivity (On Site)	1258	umhos/cm	11/02/1999	143		kbh	
eH (On Site)	-4	millivts	10/28/1999	2		kbh	
Oxygen, Dissolved (On Site)	0.95	mg/L	10/28/1999	33		kbh	
pH (On Site)	7.13	S.U.	10/28/1999	395		kbh	
Temperature (On Site)	11.6	Degree C	10/28/1999	153		kbh	
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete	ekh	SW 6020
Arsenic, Dissolved, ICPMS	0.164	mg/L	11/03/1999	541	<0.005	ekh	SW 6020

ANALYTICAL REPORT

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HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
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SAMPLE NO.	SAMPLE DESCRIPTION	DATE/TIME TAKEN
569968	ALB025-MW06SB-G102899B-340	10/28/1999 18:00

Nitrogen, Ammonia Direct	24.0	mg/L	11/13/1999	984	<0.05	imp	EPA 350.1
Solids, Total Dissolved	612	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
Conductivity (On Site)	1258	umhos/cm	11/02/1999	143		kbh	
eH (On Site)	-4	millivts	10/28/1999	2		kbh	
Oxygen, Dissolved (On Site)	0.95	mg/L	10/28/1999	33		kbh	
pH (On Site)	7.13	S.U.	10/28/1999	395		kbh	
Temperature (On Site)	11.6	Degree C	10/28/1999	153		kbh	
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete	ekh	SW 6020
Arsenic, Dissolved, ICPMS	0.164	mg/L	11/03/1999	541	<0.005	ekh	SW 6020

ANALYTICAL REPORT

William G. Petruzzi
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3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
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SAMPLE NO.	SAMPLE DESCRIPTION	DATE/TIME TAKEN
569969	ALB025-FB2-W102899-340	10/28/1999 18:35

Nitrogen, Ammonia Direct	<0.05	mg/L	11/15/1999	986	<0.05	imp	EPA 350.1
Solids, Total Dissolved	<50	mg/L	11/01/1999	988	<50	bjm	EPA 160.1
ICPMS DISSOLVED METALS	Complete		11/03/1999	380	Complete	ekh	SW 6020
Aluminum, Dissolved, ICPMS	<0.100	mg/L	11/03/1999	578	<0.100	ekh	SW 6020
Antimony, Diss., ICPMS	<0.0050	mg/L	11/03/1999	553	<0.0050	ekh	SW 6020
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/03/1999	541	<0.0050	ekh	SW 6020
Cobalt, Diss., ICPMS	<0.010	mg/L	11/03/1999	567	<0.010	ekh	SW 6020
Manganese, Dissolved, ICPMS	<0.020	mg/L	11/03/1999	599	<0.020	ekh	SW 6020
Nickel, Dissolved, ICPMS	<0.050	mg/L	11/03/1999	571	<0.050	ekh	SW 6020

VOLATILE COMPOUNDS - 8260 (AQ)							
8260 - SW846 (AQ)	Complete		11/05/1999	2140	Complete	jpf	
Benzene	<5.0	ug/L	11/05/1999	2140	<5.0	jpf	SW 8260A
Vinyl Chloride	<1.0	ug/L	11/05/1999	2140	<1.0	jpf	SW 8260A
Surrogate:d4-1,2-DCE	100	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Dibromofluoromethane	101	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Toluene-d8	98	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Bromofluorobenzene	100	%	11/05/1999	2140		jpf	SW 8260A

VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane	<1	ug/L	11/03/1999	288	<1	bmh	EPA 504.1

ANALYTICAL REPORT

William G. Petruzzi
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3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Client Project ID: Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
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SAMPLE NO.	SAMPLE DESCRIPTION	DATE/TIME TAKEN
569970	ALB025-TB1-W102899-340	10/28/1999

VOLATILE COMPOUNDS - 8260 (AQ)							
8260 - SW846 (AQ)	Complete		11/05/1999	2140	Complete	jpf	
Benzene	<5.0	ug/L	11/05/1999	2140	<5.0	jpf	SW 8260A
Vinyl Chloride	<1.0	ug/L	11/05/1999	2140	<1.0	jpf	SW 8260A
Surrogate:d4-1,2-DCE	101	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Dibromofluoromethane	104	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Toluene-d8	94	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Bromofluorobenzene	94	%	11/05/1999	2140		jpf	SW 8260A

VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane	<1	ug/L	11/03/1999	288	<1	bmh	EPA 504.1

QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION

William G. Petruzzi
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3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Analyte	Prep Batch Number	Run Batch Number	CCV True Concentration	CCV Concentration Observed	Flag	Units	Percent Recovery
Nitrogen, Ammonia Direct		984	0.50	0.51		mg/L	102
Nitrogen, Ammonia Direct		986	0.50	0.50		mg/L	100
Aluminum, Dissolved, ICPMS		578	0.050	0.051		mg/L	102
Antimony, Diss, ICPMS		553	0.050	0.052		mg/L	104
Arsenic, Dissolved, ICPMS		541	0.050	0.050		mg/L	100
Cobalt, Diss, ICPMS		567	0.050	0.050		mg/L	100
Manganese, Dissolved, ICPMS		599	0.050	0.047		mg/L	94
Nickel, Dissolved, ICPMS		571	0.050	0.051		mg/L	102
VOLATILE COMPOUNDS - 8260 (AQ)							
Benzene		2140	50	48.2		ug/L	96
Vinyl Chloride		2140	50	49.0		ug/L	98
VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane		288	0.20	0.195		ug/L	98

CCV - Continuing Calibration Verification

QUALITY CONTROL REPORT BLANKS

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3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis	Flag	Units	Date Prepped
Nitrogen, Ammonia Direct		984	<0.05		mg/L	
Nitrogen, Ammonia Direct		986	<0.05		mg/L	
Solids, Total Dissolved		988	<50		mg/L	
Aluminum, Dissolved, ICPMS		578	<0.10		mg/L	
Antimony, Diss, ICPMS		553	<0.0050		mg/L	
Arsenic, Dissolved, ICPMS		541	<0.0050		mg/L	
Cobalt, Diss, ICPMS		567	<0.010		mg/L	
Manganese, Dissolved, ICPMS		599	<0.020		mg/L	
Nickel, Dissolved, ICPMS		571	<0.050		mg/L	
VOLATILE COMPOUNDS - 8260 (AQ)						
Benzene		2140	<5.0		ug/L	
Vinyl Chloride		2140	<1.0		ug/L	
Surrogate:d4-1,2-DCE		2140	101		%	
Surrogate:Dibromofluoromethane		2140	103		%	
Surrogate:Toluene-d8		2140	99		%	
Surrogate:Bromofluorobenzene		2140	97		%	
VOLATILES - 504.1						
1,2-Dibromo-3-chloropropane		288	<1		ug/L	

Advisory Control Limits for Blanks:

Metals/Wet Chemistry/ Conventional/GC - all compounds should be less than the Reporting Limit.

GC/MS - Semi-Volatiles - all compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the reporting limit.

Volatiles - Toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit. All other volatile compounds should be less than the Reporting Limit.

PAGE 11 of 14

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

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Suite 300
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11/18/1999

Job Number: 99.18964

Analyte	Prep Batch Number	Run Batch Number	LCS True Concentration	LCS Concentration Observed	Units	LCS Recovery	Flag
Solids, Total Dissolved		988	330.	312	mg/L	95	
VOLATILE COMPOUNDS - 8260 (AQ)							
Benzene		2140	20	20.7	ug/L	104	
Vinyl Chloride		2140	20	18.6	ug/L	93	
Surrogate:d4-1,2-DCE		2140	50	51.2	%	102	
Surrogate:Dibromofluoromethane		2140	50	50.8	%	102	
Surrogate:Toluene-d8		2140	50	49.3	%	99	
Surrogate:Bromofluorobenzene		2140	50	48.4	%	97	
VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane		288	0.20	0.19	ug/L	95	

LCS - Laboratory Control Standard

Advisory Control Limits : Inorganics statistical limits are established at the mean +/- 3 standard deviations.
If statistical limits are not established the LCS should be 80 - 120 % recovery.

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QUALITY CONTROL REPORT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE

William G. Petruzzi
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Suite 300
Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Analyte	Prep Batch Number	Run Batch Number	Matrix Spike Result	Sample Result	Spike Amount	Units	% Rec.	MSD Result	MSD Spike Amount	Units	% Rec.	RPD	Fl
Nitrogen, Ammonia Direct		984	0.53	0.13	0.50	mg/L	80	0.52	0.50	mg/L	78	1.9	
Nitrogen, Ammonia Direct		986	0.69	0.23	0.50	mg/L	92	0.69	0.50	mg/L	92	0	
Aluminum, Dissolved, ICPMS		578	0.193	<0.100	0.200	mg/L	96	0.189	0.200	mg/L	94	2.1	
Antimony, Diss, ICPMS		553	0.207	<0.0050	0.200	mg/L	104	0.208	0.200	mg/L	104	0.5	
Arsenic, Dissolved, ICPMS		541	0.230	<0.0050	0.200	mg/L	115	0.227	0.200	mg/L	114	1.3	
Cobalt, Diss, ICPMS		567	0.188	<0.010	0.200	mg/L	94	0.189	0.200	mg/L	94	0.5	
Manganese, Dissolved, ICPMS		599	0.247	0.082	0.200	mg/L	82	0.245	0.200	mg/L	82	0.8	
Nickel, Dissolved, ICPMS		571	0.188	<0.050	0.200	mg/L	94	0.191	0.200	mg/L	96	1.6	
VOLATILE COMPOUNDS - 8260 (AQ)													
Benzene		2140	19.7	<5	20	ug/L	98	17.7	20	ug/L	88	11	
Vinyl Chloride		2104	21.1	<1	20	ug/L	106	24.2	20	ug/L	121	13.7	
VOLATILES - 504.1													
1,2-Dibromo-3-chloropropane		288	0.192	<1	0.20	ug/L	96	0.21	0.20	ug/L	105	8.9	

NOTE: Matrix Spike Samples may not be samples from this job.

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

3601 SOUTH DIXIE DRIVE / DAYTON, OH 45439 / 937-294-6856 / FAX: 937-294-7816

QUALITY CONTROL REPORT DUPLICATES

William G. Petruzzzi
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3401 Glendale Ave.
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Toledo, OH 43614

11/18/1999

Job Number: 99.18964

Analyte	Prep	Run	Original	Duplicate	Units	RPD	Flag
	Batch	Batch					
	Number	Number					
Solids, Total Dissolved		988	605	617	mg/L	2.0	

NOTE: Spikes and Duplicates may not be samples from this job.

RPD - Relative Percent Difference

Advisory Control Limits for Duplicates - RPD should be less than 20.

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QUALITY CONTROL FLAG DEFINITIONS

Job Number: 99.18964

(*) Indicates an out-of-control QC. The analytical data was reported based on other supporting quality control information.

(Note) Indicates to review the notes and comments section of the analytical report as there is additional information concerning this analytical result.

(MS) Indicates that the Matrix Spike (MS) was out of statistical advisory limits.

(MSD) Indicates that the Matrix Spike Duplicate (MSD) was out of statistical advisory limits.

(RPD) Indicates that the Relative Percent Difference (RPD) for the MS/MSD pair was outside of statistical advisory limits.

(SS) Indicates that the MS and MSD were out of statistical advisory limits.

(SSR) Indicates that the MS, MSD and RPD were out of statistical advisory limits.

(MSR) Indicates that the MS and RPD were out of statistical advisory limits.

(MSDR) Indicates that the MSD and RPD were out of statistical advisory limits.

(DL) Indicates that the MS and MSD were diluted out and the percent recoveries of the spikes could not be calculated.

(LS) Indicates that statistical accuracy and precision data is not available for spike concentrations which are < 1/4 of the sample amount. Care should be used in interpreting this data.

(J) Indicates estimated concentration due to internal standard areas or surrogate recoveries outside of control limits. A sample matrix effect is usually indicated.

(DW) Indicates Dry Weight.

Analytical Reporting Limits

The reporting limits listed for non-aqueous samples in the analytical report section are Practical Quantitation Limits (PQLs). These PQLs are based upon a typical standard weight used for a non-aqueous sample. The reporting limit for a sample may be different from the PQL listed depending upon the actual weight of sample used, the samples moisture content and any dilutions used during the analysis.

3601 SOUTH DIXIE DRIVE / DAYTON, OH 45439 / 937-294-6856 / FAX 937-294-7816

Case Narrative

Page 1

Job Number: 99.19165

Date Reported: 11/19/1999

Project: ALB025

Phase: 99.MNT

Enclosed with this case narrative are the analytical report, QC summary report and the "CLP Like" data package for all analytical work performed in support of this project.

- a). This report is issued to Hull & Associates on 11/24/1999.
- b). Analyses were conducted on Drinking water well samples indicated with (RW04) sampling designations.

Analyses conducted on Drinking water wells were as follows:

Ammonia	Method EPA 350.1
Dissolved Metals	Method 6020
(Al, Sb, As, Co, Mn, Ni)	

Volatiles	Method 8260A
(Benzene, Vinyl chloride)	

1,2-Dibromo-3-chloropropane	Method 504.1
(DBCP)	

- c). There were no analytical deviations from intended strategy.
- d). Laboratory batch numbers are found in the analytical data report for each analysis. Prep batch numbers refer to those parameters requiring preliminary preparation procedures and are used to define a set of samples that are prepped together. Run batch numbers refer to analytical analysis runs in which like samples are run together. There are QC samples for both prep batch control as well as run batch control.
- e). For this analytical Job number there were a total of 7 samples.

- 1 samples were collected from Drinking Water Wells.
- 1 sample was a Field Blank representing all Analytical parameters in the Job.
- 1 sample was a Trip Blank for the Volatile analytes (VOCs, DBCP)

Page 2

Job Number: 99.19165

Date Reported: 11/19/1999

Project: ALB025

Phase: 99.MNT

f). Please refer to analytical SOPs submitted from the Dayton Division of TestAmerica, Inc. for the appropriate QC procedures and referenced control criteria.

g). The laboratory report consists of two parts.

The first part of the report is the analytical data which includes (for each sample): sample number, sample description, date and time collected, Analysis conducted, analytical result, any qualifying flags, units of measure, data analyzed, prep batch number, run batch number, base reporting limit, analyst initials performing the analysis and the analytical method reference.

The second part of the report is the Quality Control Summary Report which includes (for each sample, where applicable): Instrument Continuing Calibration Verification checks (CCV), Method/Run blanks (MB), Laboratory Control Standards (LCS), Matrix Spike/Matrix Spike Duplicate (MS/MSD) and Duplicates (DUP). These QC summaries do not represent ALL QC performed in support of analytical data. Please refer to copied raw data in the "CLP Like" data package.

h). The analytical data submitted with this case narrative was performed for Hull & Associates, Inc. Project ID: ALB025 in Phase 99.MNT.

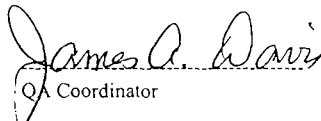
i). Samples were received on November 3, 1999 at 10:30 hours from Fed-ex. The Fed-ex airbill number is 813906426885. The temperature of the samples on receipt was 3 degrees C. All samples were received intact with a completed Chain-of-Custody.

j). All analytical holding times were observed for the analytes on this job.

k). No unpreserved 40 mL VOA vials were received for the DBCP analysis by Method 504.1 for the Trip Blank sample number 570564. Analysis was performed on HCl preserved vials left over from the analysis of 8260A. No analytical difficulties should occur from the use of these preserved vials for this analysis.

l). All quality control checks analyzed with the samples associated with this job were in control.


Project Manager


QA Coordinator

ANALYTICAL AND QUALITY CONTROL REPORT

PAGE 2 of 9

William G. Petruzzini
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Enclosed is the Analytical and Quality Control reports for the following samples submitted to the Dayton Division of TestAmerica, Inc. for analysis:

Sample Number	Sample Description	Date Taken	Date Received
570562	ALB025-RW06-G11299-384	11/02/1999	11/03/1999
570563	ALB025-FB1-W11299-384	11/02/1999	11/03/1999
570564	ALB025-TB1-W11299-384	11/02/1999	11/03/1999

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TestAmerica, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Reproduction of this analytical report is permitted only in its entirety.

Enclosure

Approved By

ANALYTICAL REPORT

William G. Petruzzini
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Client Project ID: ALB025 Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO. 570562								
SAMPLE DESCRIPTION ALB025-RW06-G11299-384								
DATE/TIME TAKEN 11/02/1999 12:00								
Nitrogen, Ammonia Direct	<0.05	mg/L	11/13/1999	984		<0.05	imp	EPA 350.1
Conductivity (On Site)	NA	umhos/cm	11/02/1999	146			kbh	
eH (On Site)	-16	millivts	11/02/1999	4			kbh	
Oxygen, Dissolved (On Site)	1.82	mg/L	11/02/1999	35			kbh	
pH (On Site)	7.44	S.U.	11/02/1999	403			kbh	
Temperature (On Site)	12.7	Degree C	11/02/1999	155			kbh	
ICPMS DISSOLVED METALS	Complete		11/09/1999	384		Complete	ekh	SW 6020
Aluminum, Dissolved, ICPMS	<0.100	mg/L	11/09/1999	582		<0.100	ekh	SW 6020
Antimony, Diss, ICPMS	<0.0050	mg/L	11/09/1999	557		<0.0050	ekh	SW 6020
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/09/1999	545		<0.0050	ekh	SW 6020
Cobalt, Diss, ICPMS	<0.010	mg/L	11/09/1999	571		<0.010	ekh	SW 6020
Manganese, Dissolved, ICPMS	0.036	mg/L	11/09/1999	603		<0.020	ekh	SW 6020
Nickel, Dissolved, ICPMS	<0.050	mg/L	11/09/1999	575		<0.050	ekh	SW 6020
VOLATILE COMPOUNDS - 8260 (AO)								
Benzene	<5.0	ug/L	11/05/1999	2140		<5.0	jpj	SW 8260A
Vinyl Chloride	<1.0	ug/L	11/05/1999	2140		<1.0	jpj	SW 8260A
Surrogate:d4-1,2-DCE		%	11/05/1999	2140			jpj	SW 8260A
Surrogate:Dibromofluoromethane	104	%	11/05/1999	2140			jpj	SW 8260A
Surrogate:Toluene-d8	97	%	11/05/1999	2140			jpj	SW 8260A
Surrogate:Bromofluorobenzene	97	%	11/05/1999	2140			jpj	SW 8260A
VOLATILES - 504.1								
1,2-Dibromo-3-chloropropane	<1	ug/L	11/05/1999	289		<1	bmh	EPA 504.1

ANALYTICAL REPORT

William G. Petruzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Client Project ID: ALB025 Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO.								
570563								
SAMPLE DESCRIPTION								
ALB025-FB1-W11299-384								
DATE/TIME TAKEN								
11/02/1999 12:00								

Nitrogen, Ammonia Direct	<0.05	mg/L	11/19/1999	987	<0.05	imp	EPA 350.1
ICPMS DISSOLVED METALS	Complete		11/09/1999	384	Complete	ekh	SW 6020
Aluminum, Dissolved, ICPMS	<0.10	mg/L	11/09/1999	562	<0.10	ekh	SW 6020
Antimony, Diss, ICPMS	<0.0050	mg/L	11/09/1999	557	<0.0050	ekh	SW 6020
Arsenic, Dissolved, ICPMS	<0.0050	mg/L	11/09/1999	545	<0.0050	ekh	SW 6020
Cobalt, Diss, ICPMS	<0.010	mg/L	11/09/1999	571	<0.010	ekh	SW 6020
Manganese, Dissolved, ICPMS	<0.020	mg/L	11/09/1999	603	<0.020	ekh	SW 6020
Nickel, Dissolved, ICPMS	<0.050	mg/L	11/09/1999	575	<0.050	ekh	SW 6020

VOLATILE COMPOUNDS - 8260 (AQ)							
8260 - SW846 (AQ)	Complete		11/05/1999	2140	Complete	jpf	
Benzene	<5.0	ug/L	11/05/1999	2140	<5.0	jpf	SW 8260A
Vinyl Chloride	<1.0	ug/L	11/05/1999	2140	<1.0	jpf	SW 8260A
Surrogate:d4-1,2-DCE	100	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Dibromofluoromethane	102	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Toluene-d8	94	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Bromofluorobenzene	98	%	11/05/1999	2140		jpf	SW 8260A

VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane	<1	ug/L	11/05/1999	289	<1	bmh	EPA 504.1

ANALYTICAL REPORT

William G. Petruzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Client Project ID: ALB025 Albion-Sheridan Landfill

Result	Flag	Units	Date Analyzed	Prep Batch Number	Run Batch Number	Reporting Limit	Analyst Initials	Method Reference
SAMPLE NO.								
570564								
SAMPLE DESCRIPTION								
ALB025-TB1-W11299-384								
DATE/TIME TAKEN								
11/02/1999 12:00								

VOLATILE COMPOUNDS - 8260 (AQ)							
8260 - SW846 (AQ)	Complete		11/05/1999	2140	Complete	jpf	
Benzene	<5.0	ug/L	11/05/1999	2140	<5.0	jpf	SW 8260A
Vinyl Chloride	<1.0	ug/L	11/05/1999	2140	<1.0	jpf	SW 8260A
Surrogate:d4-1,2-DCE	103	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Dibromofluoromethane	105	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Toluene-d8	97	%	11/05/1999	2140		jpf	SW 8260A
Surrogate:Bromofluorobenzene	94	%	11/05/1999	2140		jpf	SW 8260A

VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane	<1	ug/L	11/05/1999	289	<1	bmh	EPA 504.1

QUALITY CONTROL REPORT CONTINUING CALIBRATION VERIFICATION

William G. Petruzzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Analyte	Prep Batch Number	Run Batch Number	CCV True Concentration	CCV Concentration Observed	Flag	Units	Percent Recovery
Nitrogen, Ammonia Direct		984	0.50	0.51		mg/L	102
Nitrogen, Ammonia Direct		987	0.50	0.48		mg/L	96
Aluminum, Dissolved, ICPMS		582	0.050	0.052		mg/L	104
Antimony, Diss, ICPMS		557	0.050	0.049		mg/L	98
Arsenic, Dissolved, ICPMS		545	0.050	0.049		mg/L	98
Cobalt, Diss, ICPMS		571	0.050	0.050		mg/L	100
Manganese, Dissolved, ICPMS		603	0.050	0.048		mg/L	96
Nickel, Dissolved, ICPMS		575	0.050	0.051		mg/L	102
VOLATILE COMPOUNDS - 8260 (AQ)							
Benzene		2140	50	48.2		ug/L	96
Vinyl Chloride		2140	50	49.0		ug/L	98
VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane		289	0.20	0.21		ug/L	105

CCV - Continuing Calibration Verification

QUALITY CONTROL REPORT BLANKS

William G. Petruzzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis	Flag	Units	Date Prepped
Nitrogen, Ammonia Direct		984	<0.05		mg/L	
Nitrogen, Ammonia Direct		987	<0.05		mg/L	
Aluminum, Dissolved, ICPMS		582	<0.10		mg/L	
Antimony, Diss, ICPMS		557	<0.0050		mg/L	
Arsenic, Dissolved, ICPMS		545	<0.0050		mg/L	
Cobalt, Diss, ICPMS		571	<0.010		mg/L	
Manganese, Dissolved, ICPMS		603	<0.020		mg/L	
Nickel, Dissolved, ICPMS		575	<0.050		mg/L	
VOLATILE COMPOUNDS - 8260 (AQ)						
Benzene		2140	<5.0		ug/L	
Vinyl Chloride		2140	<1.0		ug/L	
Surrogate:d4-1,2-DCE		2140	101			
Surrogate:Dibromofluoromethane		2140	103			
Surrogate:Toluene-d8		2140	99			
Surrogate:Bromofluorobenzene		2140	97			
VOLATILES - 504.1						
1,2-Dibromo-3-chloropropane		289	<1		ug/L	

Advisory Control Limits for Blanks:

Metals/Wet Chemistry/ Conventional/GC - all compounds should be less than the Reporting Limit.

GC/MS - Semi-Volatiles - all compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the reporting limit.

Volatiles - Toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit. All other volatile compounds should be less than the Reporting Limit.

QUALITY CONTROL REPORT
LABORATORY CONTROL STANDARD

William G. Petruzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Analyte	Prep Batch Number	Run Batch Number	LCS True Concentration	LCS Concentration Observed	Units	LCS % Recovery	Flag
VOLATILE COMPOUNDS - 8260 (AQ)							
Benzene		2140	20	20.7	ug/L	104	
Vinyl Chloride		2140	20	18.6	ug/L	93	
Surrogate:d4-1,2-DCE		2140	50	51.2	%	102	
Surrogate:Dibromofluoromethane		2140	50	50.8	%	102	
Surrogate:Toluene-d8		2140	50	49.3	%	99	
Surrogate:Bromofluorobenzene		2140	50	48.4	%	97	
VOLATILES - 504.1							
1,2-Dibromo-3-chloropropane		289	0.20	0.18	ug/L	90	

LCS - Laboratory Control Standard

Advisory Control Limits : Inorganics statistical limits are established at the mean +/- 3 standard deviations.
If statistical limits are not established the LCS should be 80 - 120 % recovery.

QUALITY CONTROL REPORT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE

William G. Petruzzi
HULL & ASSOC. (Toledo)
3401 Glendale Ave.
Suite 300
Toledo, OH 43614

11/19/1999

Job Number: 99.19165

Analyte	Prep Batch Number	Run Batch Number	Matrix Spike Result	Sample Result	Spike Amount	Units	% Rec.	MSD Result	MSD Spike Amount	Units	% Rec.	RPD	Fl.
Nitrogen, Ammonia Direct		984	0.53	0.13	0.50	mg/L	80	0.52	0.50	mg/L	78	1.9	
Nitrogen, Ammonia Direct		987	0.50	0.03	0.50	mg/L	94	0.51	0.50	mg/L	96	2.0	
Aluminum, Dissolved, ICPMS		582	0.176	<0.100	0.200	mg/L	88	0.197	0.200	mg/L	98	11	
Antimony, Diss, ICPMS		557	0.185	<0.0050	0.200	mg/L	92	0.205	0.200	mg/L	102	10	
Arsenic, Dissolved, ICPMS		545	0.213	<0.0050	0.200	mg/L	107	0.231	0.200	mg/L	116	8.1	
Cobalt, Diss, ICPMS		571	0.173	<0.010	0.200	mg/L	87	0.189	0.200	mg/L	95	8.8	
Manganese, Dissolved, ICPMS		603	0.212	0.036	0.200	mg/L	88	0.229	0.200	mg/L	96	7.7	
Nickel, Dissolved, ICPMS		575	0.174	<0.050	0.200	mg/L	87	0.190	0.200	mg/L	95	8.8	
VOLATILE COMPOUNDS - 8260 (AQ)													
Benzene		2140	19.7	<5	20	ug/L	98	17.7	20	ug/L	88	11	
Vinyl Chloride		2140	21.1	<1	20	ug/L	105	24.2	20	ug/L	121	13.7	
VOLATILES - 504.1													
1,2-Dibromo-3-chloropropane		289	0.22	<1	0.20	ug/L	110	0.21	0.20	ug/L	105	4.7	

NOTE: Matrix Spike Samples may not be samples from this job.

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

QUALITY CONTROL FLAG DEFINITIONS

Job Number: 99.19165

(*) Indicates an out-of-control QC. The analytical data was reported based on other supporting quality control information.

(Note) Indicates to review the notes and comments section of the analytical report as there is additional information concerning this analytical result.

(MS) Indicates that the Matrix Spike (MS) was out of statistical advisory limits.

(MSD) Indicates that the Matrix Spike Duplicate (MSD) was out of statistical advisory limits.

(RPD) Indicates that the Relative Percent Difference (RPD) for the MS/MSD pair was outside of statistical advisory limits.

(SS) Indicates that the MS and MSD were out of statistical advisory limits.

(SSR) Indicates that the MS, MSD and RPD were out of statistical advisory limits.

(MSR) Indicates that the MS and RPD were out of statistical advisory limits.

(MSDR) Indicates that the MSD and RPD were out of statistical advisory limits.

(DL) Indicates that the MS and MSD were diluted out and the percent recoveries of the spikes could not be calculated.

(LS) Indicates that statistical accuracy and precision data is not available for spike concentrations which are $< 1/4$ of the sample amount. Care should be used in interpreting this data.

(J) Indicates estimated concentration due to internal standard areas or surrogate recoveries outside of control limits. A sample matrix effect is usually indicated.

(DW) Indicates Dry Weight.

Analytical Reporting Limits

The reporting limits listed for non-aqueous samples in the analytical report section are Practical Quantitation Limits (PQLs). These PQLs are based upon a typical standard weight used for a non-aqueous sample. The reporting limit for a sample may be different from the PQL listed depending upon the actual weight of sample used, the samples moisture content and any dilutions used during the analysis.

ATTACHMENT A-2

Ground-water Monitor Well Field Data Sheets



GROUND-WATER MONITOR WELL DATA SHEET

Monitor Well ID: MW02SB

FACILITY INFORMATION

Name: Albion-Sheridan TWP Landfill Project No.: ALB025
Address: 29975 East Erie Road, Albion, Michigan 49224
Contact: Leroy Schmidt Telephone: (517) 629-5535

MONITOR WELL DATA

Coordinates: N 7.150 N Condition of Well: Good shape, cut lock, pad OK
E 5.100 E lock replaced, nowweep hole, annular space not filled
Casing Material/Diameter: PVC 2" Screened Formation: shallow bedrock
Ground Surface Elevation: - Top of Casing Elevation: 977.63'
Total Depth: - Total Depth: 69.66'
(From Ground Surface) (From Top of Casing)
Screened Interval: - Screened Interval: 912.62' - 987.62'
(Including Sand Pack) (Screen Only)

WEATHER CONDITIONS

Weather: Sunny Temperature: 52°F
Barometric Pressure: - Wind Direction: calm

FIELD MEASURED PARAMETERS

Personnel Present: D. Benetke, P. Davis
Measured Total Depth: 68.66' Static Water Level: 28.63'
(From Top of Casing) (From Top of Casing)
Volume of Static Water: 6.5 gal Ground-Water Elevation: 948.99'

PURGING DATA

Date of Purging: 10/27/99 Time of Purging: 1315
Purging Method: disp. bailer Volume Purged: 27 gallons
Purging Rate: variable

Well Volumes Purged					
	Initial	1	2	3	4
pH	7.86	7.58	7.48	7.45	
Temp.	11.3	10.9	10.7	10.7	
Spec. Cond.	-	-	-	-	
Corr. Cond.	901	1054	1083	1083	
Redox. Pot.	-	-	-	-9mV	
D.O.	-	-	-	0.67 mg/L	
Turbidity	0	1	1	0	

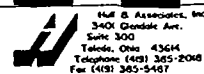
Volume-to-Purge Calculation Table					
Well Casing Dia. (in.)	Gallons Per Ft. of Depth	Feet of Standing Water	3 Well Volumes	Gallons to Purge	
2	0.163	X 40.05	X 3	19.5	
4	0.653	X	X 3	*	
6	1.469	X	X 3	*	

SAMPLING DATA

Date of Sampling: 10/27/99 Time of Sampling: 1410
Sampling Method: disp. bailer Static Water Level: 29.1'
(At Time of Sampling)

Final/Additional Well Volumes					
	1	2	3	4	
pH	7.45				
Temp.	10.7				
Spec. Cond.					
Corr. Cond.	1083				
Redox. Pot.	-19				
D.O.	0.67				
Turbidity	0				

Notes					
Orion 1230 pH/temp/Cond/DO/Eh					
pH calibration 1230 7 = 2mV, 10.01 = -71mV					
Eh slope = 55.7 mV/pH and set 1413 mV					
Percent Gas: 0 cal at 1305					
Percent LEL: 0 -70.45% / cm					
0.64 DO cal. cm.					



GROUND-WATER MONITOR WELL DATA SHEET

Monitor Well ID: MW45B

FACILITY INFORMATION

Name: Albion-Sheridan TWP Landfill Project No.: ALB025
Address: 29975 East Erie Road, Albion, Michigan 49224
Contact: Leroy Schmidt Telephone: (517) 629-5535

MONITOR WELL DATA

Coordinates: N 5.600 N Condition of Well: Concrete pad broken, nowweep hole,
E 4.300 E water in annulus (fine sand), cut lock replace
Casing Material/Diameter: PVC 2" Screened Formation: shallow bedrock W/S 3476
Ground Surface Elevation: - Top of Casing Elevation: 978.03'
Total Depth: - Total Depth: 74.98'
(From Ground Surface) (From Top of Casing)
Screened Interval: - Screened Interval: 905.03' - 980.03'
(Including Sand Pack) (Screen Only)

WEATHER CONDITIONS

Weather: Sun Temperature: 55°F
Barometric Pressure: - Wind Direction: SW

FIELD MEASURED PARAMETERS

Personnel Present: D. Benetke, P. Davis
Measured Total Depth: 63.31' → 74.98' Static Water Level: 16.86' → 31.96'
(From Top of Casing) (From Top of Casing)
Volume of Static Water: 7.0 gal Ground-Water Elevation: 946.07'

PURGING DATA

Date of Purging: 10/28/99 Time of Purging: 1100
Purging Method: disp. bailer Volume Purged: 30 gal
Purging Rate: variable

Well Volumes Purged					
	Initial	1	2	3	4
pH	11.04	9.76	7.55	7.22	7.14
Temp.	15.2	12.2	12.0	11.9	11.8
Spec. Cond.					
Corr. Cond.	1684	1410	1389	1364	1366
Redox. Pot.					
D.O.					
Turbidity	0	0	0	0	0

Volume-to-Purge Calculation Table					
Well Casing Dia. (in.)	Gallons Per Ft. of Depth	Feet of Standing Water	3 Well Volumes	Gallons to Purge	
2	0.163	X 27.45	X 3	13.28	
4	0.653	X 23.02	X 3	45.21	
6	1.469	X	X 3	*	

SAMPLING DATA

Date of Sampling: 10/28/99 Time of Sampling: 1215
Sampling Method: disp. bailer Static Water Level: 33.5'
(At Time of Sampling)

Final/Additional Well Volumes					
	1	2	3	4	
pH	7.14				
Temp.	11.8				
Spec. Cond.					
Corr. Cond.	1366				
Redox. Pot.	-5mV				
D.O.	0.87 mg/L				
Turbidity	0				

Notes Cond Slope = 0.4554					
pH calibration 7.00 = 1mV, 10.01 = 171mV					
slope = -55.3 mV/pH 12.0 slope = 0.98					
446 mV for measurement stability					
Percent Gas: 0					
Percent LEL: 0					

MS/MSD

FACILITY INFORMATION

Name: Albion-Sheridan TWP Landfill Project No.: ALB025
 Address: 29975 East Erie Road, Albion, Michigan 49224
 Contact: Leroy Schmidt Telephone: (517) 629-5535

MONITOR WELL DATA

Coordinates: N 5.700 N Condition of Well: Cut lock, replaced w/ #3476,
E 5.300 E Concrete pad OK, no sand in annulus
 Casing Material/Diameter: PVC 2" Screened Formation: Shallow bedrock
 Ground Surface Elevation: - Top of Casing Elevation: 970.01
 Total Depth: 77.93'
 (From Ground Surface) (From Top of Casing)
 Screened Interval: 994.51 - 899.51
 (Including Sand Pack) (Screen Only)

WEATHER CONDITIONS

Weather: Sun Temperature: 50°F
 Barometric Pressure: - Wind Direction: S

FIELD MEASURED PARAMETERS

Personnel Present: D. Bencke, P. Davis
 Measured Total Depth: 77.93' Static Water Level: 23.06'
 (From Top of Casing) (From Top of Casing)
 Volume of Static Water: 8.99 gal Ground-Water Elevation: 946.95

PURGING DATA

Date of Purging: 10/27/99 Time of Purging: 1503
 Purging Method: disp. bailer Volume Purged: 30 gal
 Purging Rate: Variable

Well Volumes Purged					
	Initial	1	2	3	4
pH	9.51	7.57	7.47	7.41	
Temp.	13.1	11.9	11.0	10.8	
Spec. Cond.					
Corr. Cond.	731	719	722	725	
Redox Pot.					
O.O.					
Turbidity	0	0	0	0	

Volume-to-Purge Calculation Table				
Well Casing Dia. (in.)	Gallons Per Ft. of Depth	Feet of Standing Water	3 Well Volumes	Gallons to Purge
2	0.163	X 54.87	X 3	26.7
4	0.653	X	X 3	*
6	1.469	X	X 3	*

SAMPLING DATA

Date of Sampling: 10/29/99 Time of Sampling: 1550
 Sampling Method: disp. bailer Static Water Level: 23.8'
 (At Time of Sampling)

Final/Additional Well Volumes				
	1	2	3	4
pH	7.41			
Temp.	10.8			
Spec. Cond.				
Corr. Cond.	725			
Redox Pot.	-18 mV			
O.O.	Dark			
Turbidity	0			

Notes	
Percent Gas:	0
Percent LEL:	0

FACILITY INFORMATION

Name: ALBION-SHERIDAN TWP. LANDFILL Project No.: ALB025
 Address: 29975 East Erie Road, Albion, Michigan 49224
 Contact: Leroy Schmidt Telephone: (517) 629-5535

MONITOR WELL DATA

Coordinates: N 5.250 N Condition of Well: Concrete pad buried, no weep hole,
E 4.700 E no sand in annulus, cut/replaced lock w/ #3476
 Casing Material/Diameter: PVC 2" Screened Formation: Shallow bedrock
 Ground Surface Elevation: - Top of Casing Elevation: 969.77
 Total Depth: 78.64'
 (From Ground Surface) (From Top of Casing)
 Screened Interval: 994.77 - 899.47
 (Including Sand Pack) (Screen Only)

WEATHER CONDITIONS

Weather: Sun Temperature: 50°F
 Barometric Pressure: - Wind Direction: SW

FIELD MEASURED PARAMETERS

Personnel Present: D. Bencke, P. Davis
 Measured Total Depth: 78.64' Static Water Level: 23.69'
 (From Top of Casing) (From Top of Casing)
 Volume of Static Water: 9.0 gal Ground-Water Elevation: 946.08'

PURGING DATA

Date of Purging: 10/28/99 Time of Purging: 1700
 Purging Method: disp. bailer Volume Purged: 28.5 gal
 Purging Rate: Variable

Well Volumes Purged					
	Initial	1	2	3	4
pH	7.75	7.23	7.15	7.12	7.13
Temp.	13.8	11.7	11.7	11.6	11.6
Spec. Cond.					
Corr. Cond.	1256	1209	1204	1248	1258
Redox Pot.					
O.O.					
Turbidity	0	0	0	0	0

Volume-to-Purge Calculation Table				
Well Casing Dia. (in.)	Gallons Per Ft. of Depth	Feet of Standing Water	3 Well Volumes	Gallons to Purge
2	0.163	X 54.75	X 3	27
4	0.653	X	X 3	*
6	1.469	X	X 3	*

SAMPLING DATA

Date of Sampling: 10/26/99 Time of Sampling: 1800
 Sampling Method: disp. bailer Static Water Level: 25.0'
 (At Time of Sampling)

Final/Additional Well Volumes				
	1	2	3	4
pH	7.13			
Temp.	11.6			
Spec. Cond.				
Corr. Cond.	1258			
Redox Pot.	-4 mV			
O.O.	0.95 mV			
Turbidity	0			

Notes	
Percent Gas:	0
Percent LEL:	0

Field Duplicate

Hill & Associates, Inc.
3401 Glendale Ave.
Suite 300
Toldeo, Ohio 43614
Telephone (419) 365-2048
Fax (419) 365-5487

GROUND-WATER MONITOR WELL DATA SHEET

Monitor Well ID: MW85B

FACILITY INFORMATION
Name: Albion-Sheridan Twp. Landfill Project No.: ALBO25
Address: 29975 East Eric Road, Albion, Michigan 49224
Contact: Leroy Schmidt Telephone: (517) 629-5535

MONITOR WELL DATA
Coordinates: N 5,655 N Condition of Well: Concrete pad cracked, no weep hole
E 3,750 E water in annulus (no sand), cut/replaced h/w #5476
Casing Material/Diameter: PVC 2" Screened Formation: Shallow Bedrock W/S 5476
Ground Surface Elevation: - Top of Casing Elevation: 981.83
Total Depth: - Total Depth: 75.34
(From Ground Surface) (From Top of Casing)
Screened Interval: - Screened Interval: 909.83 - 914.83
(Including Sand Pack) (Screen Only)

WEATHER CONDITIONS
Weather: Sun Temperature: 68°F
Barometric Pressure: - Wind Direction: W

FIELD MEASURED PARAMETERS
Personnel Present: D. Benecke, P. Davis
Measured Total Depth: 75.34' Static Water Level: 35.73'
(From Top of Casing) (From Top of Casing)
Volume of Static Water: 6.5 gal Ground-Water Elevation: 946.10'

PURGING DATA
Date of Purging: 10/28/99 Time of Purging: 1435
Purging Method: disp. bailer Volume Purged: 21 gal
Purging Rate: variable

Well Volumes Purged

	Initial	1	2	3	4
pH	9.49	7.36	7.26	7.25	7.25
Temp.	12.9	11.7	11.6	11.4	11.4
Spec. Cond.					
Corr. Cond.	733	923	924	928	928
Redox. Pot.					
D.O.					
Turbidity	0	0	0	0	0

Volume-to-Purge Calculation Table

Well Casing Dia. (in.)	Gallons Per Ft. of Depth	Feet of Standing Water	3 Well Volumes	Gallons to Purge
2	0.163	X 37.61	X 3	19.5
4	0.653	X	X 3	*
6	1.469	X	X 3	*

SAMPLING DATA
Date of Sampling: 10/28/99 Time of Sampling: 15:15
Sampling Method: disp. bailer Static Water Level: 36.4'
(At Time of Sampling) (At Time of Sampling)

Final/Additional Well Volumes

	1	2	3	4
pH	7.25			
Temp.	11.4			
Spec. Cond.				
Corr. Cond.	928			
Redox. Pot.	-10			
D.O.	0.48			
Turbidity	0			

Notes

Percent Gas: 0
Percent LEL: 0

Hill & Associates, Inc.
3401 Glendale Ave.
Suite 300
Toldeo, Ohio 43614
Telephone (419) 365-2048
Fax (419) 365-5487

GROUND-WATER MONITOR WELL DATA SHEET

Monitor Well ID: MW95B

FACILITY INFORMATION
Name: ALBION-SHERIDAN TWP. LANDFILL Project No.: ALBO25
Address: 29975 East Eric Road, Albion, Michigan 49224
Contact: Leroy Schmidt Telephone: (517) 629-5535

MONITOR WELL DATA
Coordinates: N 5,250 N Condition of Well: Concrete pad cracked, water in
E 3,750 E annulus (no sand), no weep hole, cut/replaced h/w #5476
Casing Material/Diameter: PVC 2" Screened Formation: Shallow Bedrock
Ground Surface Elevation: - Top of Casing Elevation: 960.06'
Total Depth: - Total Depth: 62.64'
(From Ground Surface) (From Top of Casing)
Screened Interval: - Screened Interval: 900.06' - 905.06'
(Including Sand Pack) (Screen Only)

WEATHER CONDITIONS
Weather: Sun Temperature: 70°F
Barometric Pressure: - Wind Direction: W

FIELD MEASURED PARAMETERS
Personnel Present: D. Benecke, P. Davis
Measured Total Depth: 62.64' Static Water Level: 14.00'
(From Top of Casing) (From Top of Casing)
Volume of Static Water: 7.9 gal Ground-Water Elevation: 946.06'

PURGING DATA
Date of Purging: 10/28/99 Time of Purging: 1540
Purging Method: disp. bailer Volume Purged: 25 gal
Purging Rate: variable

Well Volumes Purged

	Initial	1	2	3	4
pH	7.49	7.17	7.18	7.17	
Temp.	13.8	11.6	11.5	11.3	
Spec. Cond.					
Corr. Cond.	1188	1238	1236	1239	
Redox. Pot.					
D.O.					
Turbidity	0	0	0	0	

Volume-to-Purge Calculation Table

Well Casing Dia. (in.)	Gallons Per Ft. of Depth	Feet of Standing Water	3 Well Volumes	Gallons to Purge
2	0.163	X 48.64	X 3	23.7
4	0.653	X	X 3	*
6	1.469	X	X 3	*

SAMPLING DATA
Date of Sampling: 10/28/99 Time of Sampling: 1620
Sampling Method: disp. bailer Static Water Level: 15.25'
(At Time of Sampling) (At Time of Sampling)

Final/Additional Well Volumes

	1	2	3	4
pH	7.17			
Temp.	11.3			
Spec. Cond.				
Corr. Cond.	1239			
Redox. Pot.	-6			
D.O.	0.48			
Turbidity	0			

Notes

Percent Gas: 0
Percent LEL: 0

ATTACHMENT A-3

Chain of Custody and
Request for Analysis Form

REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025-06M001-1340 ALB025: MWD25B: 9102791: 340
Billing Address/PO #:
Sample Type: GROUND WATER ☒ Grab ☐ Composite

GENERAL	METALS	MISC ORGANICS
<input checked="" type="checkbox"/> Specific Conductance	T* D*	
<input type="checkbox"/> Field	<input type="checkbox"/> Aluminum	<input type="checkbox"/> MTBE
<input type="checkbox"/> Lab	<input type="checkbox"/> Antimony	<input type="checkbox"/> BTEX
<input checked="" type="checkbox"/> Diss Oxygen	<input checked="" type="checkbox"/> Arsenic	<input type="checkbox"/> TPH
<input type="checkbox"/> Field	<input type="checkbox"/> Barium	<input type="checkbox"/> MDNR Scan 1
<input type="checkbox"/> Lab	<input type="checkbox"/> Beryllium	<input type="checkbox"/> MDNR Scan 2
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cadmium	<input type="checkbox"/> MDNR Scan 3
<input type="checkbox"/> Field	<input type="checkbox"/> Calcium	<input type="checkbox"/> MDNR Scan 4
<input type="checkbox"/> Lab	<input type="checkbox"/> Chromium	<input type="checkbox"/> MDNR Scan 5
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> Cobalt	<input type="checkbox"/> MDNR Scan 6
<input type="checkbox"/> Field	<input type="checkbox"/> Copper	<input type="checkbox"/> MDNR Scan 7
<input type="checkbox"/> Lab	<input type="checkbox"/> Iron	<input type="checkbox"/> MDNR Scan 8
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> Lead	<input type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)
<input type="checkbox"/> Field	<input type="checkbox"/> Magnesium	<input type="checkbox"/> TCLP
<input type="checkbox"/> Lab	<input type="checkbox"/> Manganese	<input type="checkbox"/> TCLP-All
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Mercury	<input type="checkbox"/> Metals-Michigan (10)
<input type="checkbox"/> TVS	<input type="checkbox"/> Molybdenum	<input type="checkbox"/> Metals (8)
<input type="checkbox"/> TSS	<input type="checkbox"/> Nickel	<input type="checkbox"/> Volatiles
<input type="checkbox"/> VSS	<input type="checkbox"/> Potassium	<input type="checkbox"/> Semivolatiles
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Selenium	<input type="checkbox"/> Herbicides/Pesticides
<input type="checkbox"/> Acidity	<input type="checkbox"/> Silver	<input type="checkbox"/> Matrix Spike
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Sodium	<input type="checkbox"/> ADDITIONAL
<input type="checkbox"/> Alkalinity, as CaCO ₃	<input type="checkbox"/> Thallium	<input type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE
<input type="checkbox"/> Alkalinity, as HCO ₃	<input type="checkbox"/> Tin	
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Titanium	
<input type="checkbox"/> TOC	<input type="checkbox"/> Vanadium	
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Zinc	
	T* - Total Metals	
	D* - Dissolved Metals	

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes: pH S.U. = 7.45
Specific Conductance uhm/cm = 1083
Temp. °C = 11.7
Dissolved Oxygen mg/L = 0.67
eH mvolts = 19

Sample Containers Provided By: Test America, Inc. SAMPLERS:

Submitted by: p.davis Received by: M. Boyd Date: 10/30/99

*Please reference on all analytical reports

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025-06M001-1340 ALB025: MWD25B: 9102791: 340
Billing Address/PO #:
Sample Type: LAB WATER ☒ Grab ☐ Composite

GENERAL	METALS	MISC ORGANICS
<input type="checkbox"/> Specific Conductance	T* D*	
<input type="checkbox"/> Field	<input checked="" type="checkbox"/> Aluminum	<input type="checkbox"/> MTBE
<input type="checkbox"/> Lab	<input checked="" type="checkbox"/> Antimony	<input type="checkbox"/> BTEX
<input type="checkbox"/> Diss Oxygen	<input checked="" type="checkbox"/> Arsenic	<input type="checkbox"/> TPH
<input type="checkbox"/> Field	<input type="checkbox"/> Barium	<input type="checkbox"/> MDNR Scan 1
<input type="checkbox"/> Lab	<input type="checkbox"/> Beryllium	<input type="checkbox"/> MDNR Scan 2
<input type="checkbox"/> pH	<input type="checkbox"/> Cadmium	<input type="checkbox"/> MDNR Scan 3
<input type="checkbox"/> Field	<input type="checkbox"/> Calcium	<input type="checkbox"/> MDNR Scan 4
<input type="checkbox"/> Lab	<input type="checkbox"/> Chromium	<input type="checkbox"/> MDNR Scan 5
<input type="checkbox"/> Temperature	<input checked="" type="checkbox"/> Cobalt	<input type="checkbox"/> MDNR Scan 6
<input type="checkbox"/> Field	<input checked="" type="checkbox"/> Copper	<input type="checkbox"/> MDNR Scan 7
<input type="checkbox"/> Lab	<input type="checkbox"/> Iron	<input type="checkbox"/> MDNR Scan 8
<input type="checkbox"/> eH	<input type="checkbox"/> Lead	<input checked="" type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)
<input type="checkbox"/> Field	<input type="checkbox"/> Magnesium	<input type="checkbox"/> TCLP
<input type="checkbox"/> Lab	<input checked="" type="checkbox"/> Manganese	<input type="checkbox"/> TCLP-All
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Mercury	<input type="checkbox"/> Metals-Michigan (10)
<input type="checkbox"/> TVS	<input type="checkbox"/> Molybdenum	<input type="checkbox"/> Metals (8)
<input checked="" type="checkbox"/> TSS	<input checked="" type="checkbox"/> Nickel	<input type="checkbox"/> Volatiles
<input checked="" type="checkbox"/> VSS	<input type="checkbox"/> Potassium	<input type="checkbox"/> Semivolatiles
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Selenium	<input type="checkbox"/> Herbicides/Pesticides
<input type="checkbox"/> Acidity	<input type="checkbox"/> Silver	<input type="checkbox"/> Matrix Spike
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Sodium	<input type="checkbox"/> ADDITIONAL
<input type="checkbox"/> Alkalinity, as CaCO ₃	<input type="checkbox"/> Thallium	<input checked="" type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE
<input type="checkbox"/> Alkalinity, as HCO ₃	<input type="checkbox"/> Tin	
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Titanium	
<input type="checkbox"/> TOC	<input type="checkbox"/> Vanadium	
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Zinc	
	T* - Total Metals	
	D* - Dissolved Metals	

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes:

Sample Containers Provided By: Test America, Inc. SAMPLERS:

Submitted by: p.davis Received by: M. Boyd Date: 10/30/99

*Please reference on all analytical reports

REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29875 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025: MW045B: 6102877: 340
Billing Address/PO #:

Sample Type: GROUND WATER ☒ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input checked="" type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T ⁺ D ⁺	Aluminum	<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input type="checkbox"/> Arsenic	Antimony	<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input checked="" type="checkbox"/> Barium	Beryllium	<input type="checkbox"/> TPH	
<input checked="" type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input type="checkbox"/> Cadmium	Chromium	<input type="checkbox"/> MONR Scan 1	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> COD	<input type="checkbox"/> Calcium	Cobalt	<input type="checkbox"/> MONR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/> Copper	Iron	<input type="checkbox"/> MONR Scan 3	
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Lead	Magnesium	<input type="checkbox"/> MONR Scan 4	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/> Manganese	Mercury	<input type="checkbox"/> MONR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/> Nickel	Molybdenum	<input type="checkbox"/> MONR Scan 6	
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input type="checkbox"/> Potassium	Selenium	<input type="checkbox"/> MONR Scan 7	
<input checked="" type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/> Silver	Sodium	<input type="checkbox"/> MONR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrate	<input type="checkbox"/> Thallium	Tin	<input type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)	
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/> Titanium	Vanadium	<input type="checkbox"/> TCLP	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/> Zinc		<input type="checkbox"/> TCLP-AII	
<input type="checkbox"/> Lab	<input type="checkbox"/> Oil & Grease			<input type="checkbox"/> Metals Michigan (10)	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Phenols			<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phosphorus			<input type="checkbox"/> Volatiles	
<input type="checkbox"/> TSS	<input type="checkbox"/> Silica			<input type="checkbox"/> Semivolatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Sulfate			<input type="checkbox"/> Herbicides/Pesticides	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfide			<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Turbidity			<input type="checkbox"/> ADDITIONAL	
<input type="checkbox"/> Alkalinity, Total				<input type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as CaCO ₃					
<input type="checkbox"/> Alkalinity, as HCO ₃					
<input type="checkbox"/> BOD-5					
<input type="checkbox"/> TOC					
<input type="checkbox"/> Total Hardness					
	<input type="checkbox"/> Priority Pollutants-All				
	<input type="checkbox"/> Volatile Organics				
	<input type="checkbox"/> Base/Neutral Extractables				
	<input type="checkbox"/> Acid Extractable (Phenols)				
	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)				
	<input type="checkbox"/> Pesticides and PCB's				

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes: pH S.U. = 7.14
Specific Conductance u/m/cm = 1360
Temp. °C = 11.8
Dissolved Oxygen mg/L = 0.97
eH mv/dts = -5

Sample Containers Provided By: Test America, Inc. SAMPLERS:

Submitted by: [Signature] Received by: Y.M. Boyd Date: 10/30/99

*Please reference to all analytical reports

REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29875 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025: MW045B: 6102877: 340
Billing Address/PO #:

Sample Type: GROUND WATER ☒ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input checked="" type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T ⁺ D ⁺	Aluminum	<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input type="checkbox"/> Arsenic	Antimony	<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input checked="" type="checkbox"/> Barium	Beryllium	<input type="checkbox"/> TPH	
<input checked="" type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input type="checkbox"/> Cadmium	Chromium	<input type="checkbox"/> MONR Scan 1	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> COD	<input type="checkbox"/> Calcium	Cobalt	<input type="checkbox"/> MONR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/> Copper	Iron	<input type="checkbox"/> MONR Scan 3	
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Lead	Magnesium	<input type="checkbox"/> MONR Scan 4	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/> Manganese	Mercury	<input type="checkbox"/> MONR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/> Nickel	Molybdenum	<input type="checkbox"/> MONR Scan 6	
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input type="checkbox"/> Potassium	Selenium	<input type="checkbox"/> MONR Scan 7	
<input checked="" type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/> Silver	Sodium	<input type="checkbox"/> MONR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrate	<input type="checkbox"/> Thallium	Tin	<input type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)	
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/> Titanium	Vanadium	<input type="checkbox"/> TCLP	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/> Zinc		<input type="checkbox"/> TCLP-AII	
<input type="checkbox"/> Lab	<input type="checkbox"/> Oil & Grease			<input type="checkbox"/> Metals Michigan (10)	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Phenols			<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phosphorus			<input type="checkbox"/> Volatiles	
<input type="checkbox"/> TSS	<input type="checkbox"/> Silica			<input type="checkbox"/> Semivolatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Sulfate			<input type="checkbox"/> Herbicides/Pesticides	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfide			<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Turbidity			<input type="checkbox"/> ADDITIONAL	
<input type="checkbox"/> Alkalinity, Total				<input type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as CaCO ₃					
<input type="checkbox"/> Alkalinity, as HCO ₃					
<input type="checkbox"/> BOD-5					
<input type="checkbox"/> TOC					
<input type="checkbox"/> Total Hardness					
	<input type="checkbox"/> Priority Pollutants-All				
	<input type="checkbox"/> Volatile Organics				
	<input type="checkbox"/> Base/Neutral Extractables				
	<input type="checkbox"/> Acid Extractable (Phenols)				
	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)				
	<input type="checkbox"/> Pesticides and PCB's				

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes: pH S.U. = 7.25
Specific Conductance u/m/cm = 928
Temp. °C = 11.4
Dissolved Oxygen mg/L = 0.48
eH mv/dts = -10

Sample Containers Provided By: Test America, Inc. SAMPLERS:

Submitted by: [Signature] Received by: Y.M. Boyd Date: 10/30/99

*Please reference to all analytical reports



REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL

Sample Date: 10/28/99

Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224

Contact: LEROY SCHMIDT Telephone: 517-629-5535

Report to: WILLIAM PETRUZZI

Sample ID#: ALB025 O&M001 T340 ALB025 RW04: 6102877 MS: 340

Billing Address/PO #:

Sample Type: DRINKING WATER

☒

Grab

☐

Composite

GENERAL

☒ Specific Conductance☒ Field☐ Lab☒ Diss Oxygen☒ Field☐ Lab☒ pH☒ Field☐ Lab☒ Temperature☒ Field☐ Lab☒ eH☒ Field☐ Lab☐ T/S Dry Solids☐ TVS☒ TSS☐ VSS☐ TDS☐ Acidity☐ Alkalinity, Total☐ Alkalinity, as CaCO₃☐ Alkalinity, as HCO₃☐ BOD-5☐ TOC☐ Total Hardness☐ Paint Filter Test☐ Flash Point☐ Reactivity (CN, S)☐ TOX☐ COD☐ Chloride☐ Cyanide☐ Fluoride☐ Hydrocarbons-IR☐ MBAS☒ N-Ammonia☐ N-Nitrite☐ N-Nitrate-Nitrite☐ Oil & Grease☐ Phenols☐ Phosphorus☐ Silica☐ Sulfate☐ Sulfide☐ Turbidity☐ Priority Pollutants-All☐ Volatile Organics☐ Base/Neutral Extractables☐ Acid Extractable (Phenols)☐ Inorganics (13 Metals + Cyanide)☐ Pesticides and PCBs

METALS

T+ D+

☒ Aluminum☒ Antimony☒ Arsenic☒ Barium☐ Beryllium☐ Cadmium☐ Calcium☐ Chromium☒ Cobalt☐ Copper☐ Iron☐ Lead☐ Magnesium☒ Manganese☒ Mercury☒ Molybdenum☒ Nickel☐ Potassium☐ Selenium☐ Silver☐ Sodium☐ Thallium☐ Tin☐ Titanium☐ Vanadium☐ Zinc

T - Total Metals

D - Dissolved Metals

MISC ORGANICS

☐ MTBE☐ BTEX☐ TPH☐ MDNR Scan 1☐ MDNR Scan 2☐ MDNR Scan 3☐ MDNR Scan 4☐ MDNR Scan 5☐ MDNR Scan 6☐ MDNR Scan 7☐ MDNR Scan 8☒ VOC'S - TCL (BENZENE AND VINYL CHLORIDE)

TCLP

☐ TCLP-All☐ Metals-Michigan (10)☐ Metals (8)☐ Volatiles☐ Semivolatiles☐ Herbicides/Pesticides☐ Matrix Spike

ADDITIONAL

☒ 1,2-DIBROMO-3-CHLOROPROPANE☐ Ship UPS☐ Client Pick-up☐ Site Delivery/Pick-up☒ Our Sampling

Notes: pH S.U. =

Specific Conductance u/m/cm =

Temp. °C =

Dissolved Oxygen mg/L =

eH mvolt =

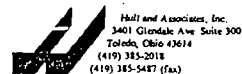
Sample Containers Provided By: Test America, Inc.

SAMPLERS

Submitted by: *plavis*Received by: *M. Boyd*

Date: 10/30/99

*Please reference on all analytical reports



REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL

Sample Date: 10/30/99

Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224

Contact: LEROY SCHMIDT Telephone: 517-629-5535

Report to: WILLIAM PETRUZZI

Sample ID#: ALB025 O&M001 T340 ALB025 RW04: 6102877 MS: 340

Billing Address/PO #:

Sample Type: DRINKING WATER

☒

Grab

☐

Composite

GENERAL

☒ Specific Conductance☒ Field☐ Lab☒ Diss Oxygen☒ Field☐ Lab☒ pH☒ Field☐ Lab☒ Temperature☒ Field☐ Lab☒ eH☒ Field☐ Lab☐ T/S Dry Solids☐ TVS☒ TSS☐ VSS☐ TDS☐ Acidity☐ Alkalinity, Total☐ Alkalinity, as CaCO₃☐ Alkalinity, as HCO₃☐ BOD-5☐ TOC☐ Total Hardness☐ Paint Filter Test☐ Flash Point☐ Reactivity (CN, S)☐ TOX☐ COD☐ Chloride☐ Cyanide☐ Fluoride☐ Hydrocarbons-IR☐ MBAS☒ N-Ammonia☐ N-Nitrite☐ N-Nitrate-Nitrite☐ Oil & Grease☐ Phenols☐ Phosphorus☐ Silica☐ Sulfate☐ Sulfide☐ Turbidity☐ Priority Pollutants-All☐ Volatile Organics☐ Base/Neutral Extractables☐ Acid Extractable (Phenols)☐ Inorganics (13 Metals + Cyanide)☐ Pesticides and PCBs

METALS

T+ D+

☒ Aluminum☒ Antimony☒ Arsenic☒ Barium☐ Beryllium☐ Cadmium☐ Calcium☐ Chromium☒ Cobalt☐ Copper☐ Iron☐ Lead☐ Magnesium☒ Manganese☒ Mercury☒ Molybdenum☒ Nickel☐ Potassium☐ Selenium☐ Silver☐ Sodium☐ Thallium☐ Tin☐ Titanium☐ Vanadium☐ Zinc

T - Total Metals

D - Dissolved Metals

MISC ORGANICS

☐ MTBE☐ BTEX☐ TPH☐ MDNR Scan 1☐ MDNR Scan 2☐ MDNR Scan 3☐ MDNR Scan 4☐ MDNR Scan 5☐ MDNR Scan 6☐ MDNR Scan 7☐ MDNR Scan 8☒ VOC'S - TCL (BENZENE AND VINYL CHLORIDE)

TCLP

☐ TCLP-All☐ Metals-Michigan (10)☐ Metals (8)☐ Volatiles☐ Semivolatiles☐ Herbicides/Pesticides☐ Matrix Spike

ADDITIONAL

☒ 1,2-DIBROMO-3-CHLOROPROPANE☐ Ship UPS☐ Client Pick-up☐ Site Delivery/Pick-up☒ Our Sampling

Notes: pH S.U. = 7.44

Specific Conductance u/m/cm = 709

Temp. °C = 17.8

Dissolved Oxygen mg/L = 6.08

eH mvolt = -21

Sample Containers Provided By: Test America, Inc.

SAMPLERS: *WPS, P&D*Submitted by: *plavis*Received by: *M. Boyd*

Date: 10/30/99

*Please reference on all analytical reports



REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025 QSM001 T40 ALB025: MW 06SB: GIC 2899 MSD 340
Billing Address/PO #
Sample Type: GROUND WATER ☒ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input checked="" type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T* D*		<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input type="checkbox"/> Aluminum		<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input type="checkbox"/> Antimony		<input type="checkbox"/> TPH	
<input checked="" type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input checked="" type="checkbox"/> Arsenic		<input type="checkbox"/> MDNR Scan 1	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> COO	<input type="checkbox"/> Barium		<input type="checkbox"/> MDNR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/> Beryllium		<input type="checkbox"/> MDNR Scan 3	
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Cadmium		<input type="checkbox"/> MDNR Scan 4	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/> Calcium		<input type="checkbox"/> MDNR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/> Chromium		<input type="checkbox"/> MDNR Scan 6	
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input type="checkbox"/> Cobalt		<input type="checkbox"/> MDNR Scan 7	
<input checked="" type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/> Copper		<input type="checkbox"/> MDNR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Ketidehl	<input type="checkbox"/> Iron		<input type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)	
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/> Lead		<input type="checkbox"/> TCLP	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/> Magnesium		<input type="checkbox"/> TCLP-AI	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrite	<input type="checkbox"/> Manganese		<input type="checkbox"/> Metals-Michigan (10)	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> Mercury		<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phenols	<input type="checkbox"/> Molybdenum		<input type="checkbox"/> Volatiles	
<input type="checkbox"/> TSS	<input type="checkbox"/> Phosphorus	<input type="checkbox"/> Nickel		<input type="checkbox"/> Semivolatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Silica	<input type="checkbox"/> Potassium		<input type="checkbox"/> Herbicides/Pesticides	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfate	<input type="checkbox"/> Selenium		<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Sulfide	<input type="checkbox"/> Silver		ADDITIONAL	
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Turbidity	<input type="checkbox"/> Sodium		<input type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as CaCO ₃	<input type="checkbox"/> Priority Pollutants-All	<input type="checkbox"/> Thallium			
<input type="checkbox"/> Alkalinity, as HCO ₃	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> Tin			
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Base/Neutral Extractables	<input type="checkbox"/> Titanium			
<input type="checkbox"/> TOC	<input type="checkbox"/> Acid Extractable (Phenols)	<input type="checkbox"/> Vanadium			
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)	<input type="checkbox"/> Zinc			
	<input type="checkbox"/> Pesticides and PCB's	T* - Total Metals			
		D* - Dissolved Metals			

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes: pH S.U. = 7.13
Specific Conductance umhos = 1258
Temp. °C = 11.6
Dissolved Oxygen mg/L = 0.95
eH mvolt = -4.0 mv

Sample Containers Provided By: Test America, Inc.

SAMPLERS:

Submitted by: *pdavis* Received by: *M. Boyd* Date: 10/30/99

*Please reference on all analytical reports



REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025 QSM001 T40 ALB025: MW 06SB: GIC 2899 MSD 340
Billing Address/PO #
Sample Type: DRINKING WATER ☒ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input checked="" type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T* D*		<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input checked="" type="checkbox"/> Aluminum		<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input checked="" type="checkbox"/> Antimony		<input type="checkbox"/> TPH	
<input checked="" type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input checked="" type="checkbox"/> Arsenic		<input type="checkbox"/> MDNR Scan 1	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> COO	<input type="checkbox"/> Barium		<input type="checkbox"/> MDNR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/> Beryllium		<input type="checkbox"/> MDNR Scan 3	
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/> Cadmium		<input type="checkbox"/> MDNR Scan 4	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/> Calcium		<input type="checkbox"/> MDNR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/> Chromium		<input type="checkbox"/> MDNR Scan 6	
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input checked="" type="checkbox"/> Cobalt		<input type="checkbox"/> MDNR Scan 7	
<input checked="" type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/> Copper		<input type="checkbox"/> MDNR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Ketidehl	<input type="checkbox"/> Iron		<input type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)	
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/> Lead		<input checked="" type="checkbox"/> TCLP	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/> Magnesium		<input type="checkbox"/> TCLP-AI	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrite	<input checked="" type="checkbox"/> Manganese		<input type="checkbox"/> Metals-Michigan (10)	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> Mercury		<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phenols	<input type="checkbox"/> Molybdenum		<input type="checkbox"/> Volatiles	
<input checked="" type="checkbox"/> TSS	<input type="checkbox"/> Phosphorus	<input checked="" type="checkbox"/> Nickel		<input type="checkbox"/> Semivolatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Silica	<input type="checkbox"/> Potassium		<input type="checkbox"/> Herbicides/Pesticides	
<input type="checkbox"/> TDS	<input type="checkbox"/> Sulfate	<input type="checkbox"/> Selenium		<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Sulfide	<input type="checkbox"/> Silver		ADDITIONAL	
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Turbidity	<input type="checkbox"/> Sodium		<input checked="" type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as CaCO ₃	<input type="checkbox"/> Priority Pollutants-All	<input type="checkbox"/> Thallium			
<input type="checkbox"/> Alkalinity, as HCO ₃	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> Tin			
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Base/Neutral Extractables	<input type="checkbox"/> Titanium			
<input type="checkbox"/> TOC	<input type="checkbox"/> Acid Extractable (Phenols)	<input type="checkbox"/> Vanadium			
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)	<input type="checkbox"/> Zinc			
	<input type="checkbox"/> Pesticides and PCB's	T* - Total Metals			
		D* - Dissolved Metals			

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes: pH S.U. =
Specific Conductance umhos =
Temp. °C =
Dissolved Oxygen mg/L =
eH mvolt =

Sample Containers Provided By: Test America, Inc.

SAMPLERS:

Submitted by: *pdavis* Received by: *M. Boyd* Date: 10/30/99

*Please reference on all analytical reports



REQUEST FOR ANALYSIS

Sheet 1 of 1

Hull and Associates, Inc.
3401 Glendale Ave, Suite 300
Toledo, OH 43614
(419) 385-2018
(419) 385-5487 (fax)

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB023 - PB O&M001 - T340 ALB023-WFB2-W 102899-340
Billing Address/PO #:
Sample Type: LAB WATER ☒ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T* D*		<input type="checkbox"/> MTBE	
<input type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Aluminum	<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Antimony	<input type="checkbox"/> TPH	
<input type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Arsenic	<input type="checkbox"/> MDNR Scan 1	
<input type="checkbox"/> Field	<input type="checkbox"/> COD	<input type="checkbox"/> <input type="checkbox"/>	Barium	<input type="checkbox"/> MDNR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/> <input type="checkbox"/>	Beryllium	<input type="checkbox"/> MDNR Scan 3	
<input type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/> <input type="checkbox"/>	Cadmium	<input type="checkbox"/> MDNR Scan 4	
<input type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/> <input type="checkbox"/>	Calcium	<input type="checkbox"/> MDNR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/> <input type="checkbox"/>	Chromium	<input type="checkbox"/> MDNR Scan 6	
<input type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Cobalt	<input type="checkbox"/> MDNR Scan 7	
<input type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/> <input type="checkbox"/>	Copper	<input type="checkbox"/> MDNR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Kjeldahl	<input type="checkbox"/> <input type="checkbox"/>	Iron	<input checked="" type="checkbox"/> VOC'S - TCLP	
<input type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/> <input type="checkbox"/>	Lead	(BENZENE AND VINYL CHLORIDE)	
<input type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Magnesium	<input type="checkbox"/> TCLP	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrite	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Manganese	<input type="checkbox"/> TCLP-All	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> <input type="checkbox"/>	Mercury	<input type="checkbox"/> Metals-Michigan (10)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phenols	<input type="checkbox"/> <input type="checkbox"/>	Molybdenum	<input type="checkbox"/> Metals (8)	
<input checked="" type="checkbox"/> TSS	<input type="checkbox"/> Phosphorus	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Nickel	<input type="checkbox"/> Volatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Silica	<input type="checkbox"/> <input type="checkbox"/>	Potassium	<input type="checkbox"/> Semivolatiles	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfate	<input type="checkbox"/> <input type="checkbox"/>	Selenium	<input type="checkbox"/> Herbicides/Pesticides	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Sulfide	<input type="checkbox"/> <input type="checkbox"/>	Silver	<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Turbidity	<input type="checkbox"/> <input type="checkbox"/>	Sodium	<input type="checkbox"/> ADDITIONAL	
<input type="checkbox"/> Alkalinity, as CaCO ₃		<input type="checkbox"/> <input type="checkbox"/>	Thallium	<input checked="" type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as HCO ₃		<input type="checkbox"/> <input type="checkbox"/>	Tin		
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Priority Pollutants-All	<input type="checkbox"/> <input type="checkbox"/>	Titanium		
<input type="checkbox"/> TOC	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> <input type="checkbox"/>	Vanadium		
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Base/Neutral Extractables	<input type="checkbox"/> <input type="checkbox"/>	Zinc		
	<input type="checkbox"/> Acid Extractable (Phenols)	<input type="checkbox"/> <input type="checkbox"/>			
	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)	<input type="checkbox"/> <input type="checkbox"/>			
	<input type="checkbox"/> Pesticides and PCB's	<input type="checkbox"/> <input type="checkbox"/>			

Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☐ Our Sampling ☒

Notes:

Sample Containers Provided By: Test America, Inc. SAMPLERS:

Submitted by: pdavis Received by: M. Boyd Date: 10/30/99



REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB023 - PB O&M001 - T340 ALB023-WFB2-W 102899-340
Billing Address/PO #:
Sample Type: GROUND WATER ☒ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input checked="" type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T* D*		<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input type="checkbox"/> <input type="checkbox"/>	Aluminum	<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input type="checkbox"/> <input type="checkbox"/>	Antimony	<input type="checkbox"/> TPH	
<input checked="" type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Arsenic	<input type="checkbox"/> MDNR Scan 1	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> COD	<input type="checkbox"/> <input type="checkbox"/>	Barium	<input type="checkbox"/> MDNR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/> <input type="checkbox"/>	Beryllium	<input type="checkbox"/> MDNR Scan 3	
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/> <input type="checkbox"/>	Cadmium	<input type="checkbox"/> MDNR Scan 4	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/> <input type="checkbox"/>	Calcium	<input type="checkbox"/> MDNR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/> <input type="checkbox"/>	Chromium	<input type="checkbox"/> MDNR Scan 6	
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input type="checkbox"/> <input type="checkbox"/>	Cobalt	<input type="checkbox"/> MDNR Scan 7	
<input checked="" type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/> <input type="checkbox"/>	Copper	<input type="checkbox"/> MDNR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Kjeldahl	<input type="checkbox"/> <input type="checkbox"/>	Iron	<input type="checkbox"/> VOC'S - TCLP	
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/> <input type="checkbox"/>	Lead	(BENZENE AND VINYL CHLORIDE)	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/> <input type="checkbox"/>	Magnesium	<input type="checkbox"/> TCLP	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrite	<input type="checkbox"/> <input type="checkbox"/>	Manganese	<input type="checkbox"/> TCLP-All	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/> <input type="checkbox"/>	Mercury	<input type="checkbox"/> Metals-Michigan (10)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phenols	<input type="checkbox"/> <input type="checkbox"/>	Molybdenum	<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TSS	<input type="checkbox"/> Phosphorus	<input type="checkbox"/> <input type="checkbox"/>	Nickel	<input type="checkbox"/> Volatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Silica	<input type="checkbox"/> <input type="checkbox"/>	Potassium	<input type="checkbox"/> Semivolatiles	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfate	<input type="checkbox"/> <input type="checkbox"/>	Selenium	<input type="checkbox"/> Herbicides/Pesticides	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Sulfide	<input type="checkbox"/> <input type="checkbox"/>	Silver	<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Turbidity	<input type="checkbox"/> <input type="checkbox"/>	Sodium	<input type="checkbox"/> ADDITIONAL	
<input type="checkbox"/> Alkalinity, as CaCO ₃		<input type="checkbox"/> <input type="checkbox"/>	Thallium	<input type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as HCO ₃		<input type="checkbox"/> <input type="checkbox"/>	Tin		
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Priority Pollutants-All	<input type="checkbox"/> <input type="checkbox"/>	Titanium		
<input type="checkbox"/> TOC	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/> <input type="checkbox"/>	Vanadium		
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Base/Neutral Extractables	<input type="checkbox"/> <input type="checkbox"/>	Zinc		
	<input type="checkbox"/> Acid Extractable (Phenols)	<input type="checkbox"/> <input type="checkbox"/>			
	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)	<input type="checkbox"/> <input type="checkbox"/>			
	<input type="checkbox"/> Pesticides and PCB's	<input type="checkbox"/> <input type="checkbox"/>			

Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☐ Our Sampling ☒

Notes: pH S.U. = 7.13
Specific Conductance umhos/cm = 1258
Temp. °C = 11.6
Dissolved Oxygen mg/L = 0.95
eH mvoltas = -4

Sample Containers Provided By: Test America, Inc. SAMPLERS:

Submitted by: pdavis Received by: M. Boyd Date: 10/30/99

*Please reference on all analytical reports

REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025 - FB - W 11/2/99 - 340 384
Billing Address/PO #:
Sample Type: ☒ DRINKING WATER ☐ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input checked="" type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T ⁺	D ⁺	<input type="checkbox"/> MTBE	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input type="checkbox"/> X	Aluminum	<input type="checkbox"/> BTEX	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input type="checkbox"/> X	Antimony	<input type="checkbox"/> TPH	
<input checked="" type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input type="checkbox"/> X	Arsenic	<input type="checkbox"/> MDNR Scan 1	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> COD	<input type="checkbox"/>	Barium	<input type="checkbox"/> MDNR Scan 2	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/>	Beryllium	<input type="checkbox"/> MDNR Scan 3	
<input checked="" type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/>	Cadmium	<input type="checkbox"/> MDNR Scan 4	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/>	Calcium	<input type="checkbox"/> MDNR Scan 5	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/>	Chromium	<input type="checkbox"/> MDNR Scan 6	
<input checked="" type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input type="checkbox"/> X	Cobalt	<input type="checkbox"/> MDNR Scan 7	
<input checked="" type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/>	Copper	<input type="checkbox"/> MDNR Scan 8	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Kjeldahl	<input type="checkbox"/>	Iron	<input checked="" type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)	
<input checked="" type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/>	Lead	<input type="checkbox"/> TCLP	
<input checked="" type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/>	Magnesium	<input type="checkbox"/> TCLP-All	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrite	<input type="checkbox"/> X	Manganese	<input type="checkbox"/> Metals-Michigan (10)	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/>	Mercury	<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phenols	<input type="checkbox"/>	Molybdenum	<input type="checkbox"/> Volatiles	
<input type="checkbox"/> TSS	<input type="checkbox"/> Phosphorus	<input type="checkbox"/> X	Nickel	<input type="checkbox"/> Semivolatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Silica	<input type="checkbox"/>	Potassium	<input type="checkbox"/> Herbicides/Pesticides	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfate	<input type="checkbox"/>	Selenium	<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Sulfide	<input type="checkbox"/>	Silver	ADDITIONAL	
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Turbidity	<input type="checkbox"/>	Sodium	<input checked="" type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as CaCO ₃	<input type="checkbox"/> Priority Pollutants-All	<input type="checkbox"/>	Thallium		
<input type="checkbox"/> Alkalinity, as HCO ₃	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/>	Tin		
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Base/Neutral Extractables	<input type="checkbox"/>	Titanium		
<input type="checkbox"/> TOC	<input type="checkbox"/> Acid Extractable (Phenols)	<input type="checkbox"/>	Vanadium		
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)	<input type="checkbox"/>	Zinc		
	<input type="checkbox"/> Pesticides and PCB's	<input type="checkbox"/>	*T - Total Metals		
		<input type="checkbox"/>	*D - Dissolved Metals		

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes: pH S.U. = 7.44
Specific Conductance u/mhos = NA
Temp. °C = 18.7
Dissolved Oxygen mg/L = 1.82 mg/L
eH mvolt = -116 mv

Sample Containers Provided By: Test America, Inc. SAMPLERS:
Submitted by: P. Davis Received by: P. VanZant Date: 11/3/99

*Please reference on all analytical reports

REQUEST FOR ANALYSIS

Sheet 1 of 1

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL
Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224
Contact: LEROY SCHMIDT Telephone: 517-629-5535 Report to: WILLIAM PETRUZZI
Sample ID#: ALB025 - FB - W 11/2/99 - 340 384
Billing Address/PO #:
Sample Type: ☒ LAB WATER ☐ Grab ☐ Composite

GENERAL		METALS		MISC ORGANICS	
<input type="checkbox"/> Specific Conductance	<input type="checkbox"/> Paint Filter Test	T ⁺	D ⁺	<input type="checkbox"/> MTBE	
<input type="checkbox"/> Field	<input type="checkbox"/> Flash Point	<input type="checkbox"/> X	Aluminum	<input type="checkbox"/> BTEX <td></td>	
<input type="checkbox"/> Lab	<input type="checkbox"/> Reactivity (CN, S)	<input type="checkbox"/> X	Antimony	<input type="checkbox"/> TPH <td></td>	
<input type="checkbox"/> Diss Oxygen	<input type="checkbox"/> TOX	<input type="checkbox"/> X	Arsenic	<input type="checkbox"/> MDNR Scan 1 <td></td>	
<input type="checkbox"/> Field	<input type="checkbox"/> COD	<input type="checkbox"/>	Barium	<input type="checkbox"/> MDNR Scan 2 <td></td>	
<input type="checkbox"/> Lab	<input type="checkbox"/> Chloride	<input type="checkbox"/>	Beryllium	<input type="checkbox"/> MDNR Scan 3 <td></td>	
<input type="checkbox"/> pH	<input type="checkbox"/> Cyanide	<input type="checkbox"/>	Cadmium	<input type="checkbox"/> MDNR Scan 4 <td></td>	
<input type="checkbox"/> Field	<input type="checkbox"/> Fluoride	<input type="checkbox"/>	Calcium	<input type="checkbox"/> MDNR Scan 5 <td></td>	
<input type="checkbox"/> Lab	<input type="checkbox"/> Hydrocarbons-IR	<input type="checkbox"/>	Chromium	<input type="checkbox"/> MDNR Scan 6 <td></td>	
<input type="checkbox"/> Temperature	<input type="checkbox"/> MBAS	<input type="checkbox"/> X	Cobalt	<input type="checkbox"/> MDNR Scan 7 <td></td>	
<input type="checkbox"/> Field	<input checked="" type="checkbox"/> N-Ammonia	<input type="checkbox"/>	Copper	<input type="checkbox"/> MDNR Scan 8 <td></td>	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Kjeldahl	<input type="checkbox"/>	Iron	<input checked="" type="checkbox"/> VOC'S - TCL (BENZENE AND VINYL CHLORIDE)	
<input type="checkbox"/> eH	<input type="checkbox"/> N-Organic	<input type="checkbox"/>	Lead	<input type="checkbox"/> TCLP	
<input type="checkbox"/> Field	<input type="checkbox"/> N-Nitrate-Nitrite	<input type="checkbox"/>	Magnesium	<input type="checkbox"/> TCLP-All	
<input type="checkbox"/> Lab	<input type="checkbox"/> N-Nitrite	<input type="checkbox"/> X	Manganese	<input type="checkbox"/> Metals-Michigan (10)	
<input type="checkbox"/> T/S Dry Solids	<input type="checkbox"/> Oil & Grease	<input type="checkbox"/>	Mercury	<input type="checkbox"/> Metals (8)	
<input type="checkbox"/> TVS	<input type="checkbox"/> Phenols	<input type="checkbox"/>	Molybdenum	<input type="checkbox"/> Volatiles	
<input type="checkbox"/> TSS	<input type="checkbox"/> Phosphorus	<input type="checkbox"/> X	Nickel	<input type="checkbox"/> Semivolatiles	
<input type="checkbox"/> VSS	<input type="checkbox"/> Silica	<input type="checkbox"/>	Potassium	<input type="checkbox"/> Herbicides/Pesticides	
<input checked="" type="checkbox"/> TDS	<input type="checkbox"/> Sulfate	<input type="checkbox"/>	Selenium	<input type="checkbox"/> Matrix Spike	
<input type="checkbox"/> Acidity	<input type="checkbox"/> Sulfide	<input type="checkbox"/>	Silver	ADDITIONAL	
<input type="checkbox"/> Alkalinity, Total	<input type="checkbox"/> Turbidity	<input type="checkbox"/>	Sodium	<input checked="" type="checkbox"/> 1,2-DIBROMO-3-CHLOROPROPANE	
<input type="checkbox"/> Alkalinity, as CaCO ₃	<input type="checkbox"/> Priority Pollutants-All	<input type="checkbox"/>	Thallium		
<input type="checkbox"/> Alkalinity, as HCO ₃	<input type="checkbox"/> Volatile Organics	<input type="checkbox"/>	Tin		
<input type="checkbox"/> BOD-5	<input type="checkbox"/> Base/Neutral Extractables	<input type="checkbox"/>	Titanium		
<input type="checkbox"/> TOC	<input type="checkbox"/> Acid Extractable (Phenols)	<input type="checkbox"/>	Vanadium		
<input type="checkbox"/> Total Hardness	<input type="checkbox"/> Inorganics (13 Metals + Cyanide)	<input type="checkbox"/>	Zinc		
	<input type="checkbox"/> Pesticides and PCB's	<input type="checkbox"/>	*T - Total Metals		
		<input type="checkbox"/>	*D - Dissolved Metals		

☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes:

Sample Containers Provided By: Test America, Inc. SAMPLERS:
Submitted by: P. Davis Received by: P. VanZant Date: 11/3/99

*Please reference on all analytical reports

Project/Facility: ALBION-SHERIDAN TOWNSHIP LANDFILL

Sample Date: 11/2/99

Address: 29975 EAST ERIE ROAD, ALBION, MICHIGAN, 49224

Contact: LEROY SCHMIDT Telephone: 517-629-5535

Report to: WILLIAM PETRUZZI

Sample ID#: ALB025 - TB - W 11299 384

Billing Address/PO #:

Sample Type: TRIP BLANK

☒

Grab

☐

Composite

GENERAL

- ☐ Specific Conductance
☐ Field
☐ Lab
☐ Diss Oxygen
☐ Field
☐ Lab
☐ pH
☐ Field
☐ Lab
☐ Temperature
☐ Field
☐ Lab
☐ eH
☐ Field
☐ Lab
☐ T/S Dry Solids
☐ TVS
☐ TSS
☐ VSS
☐ TDS
☐ Acidity
☐ Alkalinity, Total
☐ Alkalinity, as CaCO₃
☐ Alkalinity, as HCO₃
☐ BOD-5
☐ TOC
☐ Total Hardness

- ☐ Paint Filter Test
☐ Flash Point
☐ Reactivity (CN, S)
☐ TOX
☐ COD
☐ Chloride
☐ Cyanide
☐ Fluoride
☐ Hydrocarbons-IR
☐ MBAS
☐ N-Ammonia
☐ N-Kjeldahl
☐ N-Organic
☐ N-Nitrate-Nitrite
☐ N-Nitrite
☐ Oil & Grease
☐ Phenols
☐ Phosphorus
☐ Silica
☐ Sulfate
☐ Sulfide
☐ Turbidity
☐ Priority Pollutants-All
☐ Volatile Organics
☐ Base/Neutral Extractables
☐ Acid Extractable (Phenols)
☐ Inorganics (13 Metals + Cyanide)
☐ Pesticides and PCB's

METALS

- T* D*
☐ Aluminum
☐ Antimony
☐ Arsenic
☐ Barium
☐ Beryllium
☐ Cadmium
☐ Calcium
☐ Chromium
☐ Cobalt
☐ Copper
☐ Iron
☐ Lead
☐ Magnesium
☐ Manganese
☐ Mercury
☐ Molybdenum
☐ Nickel
☐ Potassium
☐ Selenium
☐ Silver
☐ Sodium
☐ Thallium
☐ Tin
☐ Titanium
☐ Vanadium
☐ Zinc
*T - Total Metals
*D - Dissolved Metals

MISC ORGANICS

- ☐ MTBE
☐ BTEX
☐ TPH
☐ MDNR Scan 1
☐ MDNR Scan 2
☐ MDNR Scan 3
☐ MDNR Scan 4
☐ MDNR Scan 5
☐ MDNR Scan 6
☐ MDNR Scan 7
☐ MDNR Scan 8
☒ VOC'S - TCL
(BENZENE AND VINYL CHLORIDE)

TCLP

- ☐ TCLP-All
☐ Metals-Michigan (10)
☐ Metals (8)
☐ Volatiles
☐ Semivolatiles
☐ Herbicides/Pesticides
☐ Matrix Spike

ADDITIONAL

- ☒ 1,2-DIBROMO-3-CHLOROPROPANE
☐
☐
☐
☐
☐
☐
☐

- ☐ Ship UPS ☐ Client Pick-up ☐ Site Delivery/Pick-up ☒ Our Sampling

Notes:

Sample Containers Provided By: Test America, Inc.

SAMPLERS

Submitted by: P. Davis Received by: P. Venzon Date: 11/3/99

*Please reference on all analytical reports

ATTACHMENT B

Laboratory Analytical Data Summary Tables

- ATTACHMENT B-1: Laboratory Analytical Data Summary Tables
For the Monitor Wells Screened in the
Shallow Bedrock Unit
- ATTACHMENT B-2: Laboratory Analytical Data Summary Tables
For Residential Wells

ATTACHMENT B-1

Laboratory Analytical Data Summary Tables for the
Monitor Wells Screened in the Shallow Bedrock Unit

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 1

MONITOR WELL MW-02SB

PARAMETER	UNITS	10/27/99
<u>QUARTERLY PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	<0.05
ARSENIC, DISSOLVED	mg/L	<0.005
<u>ANNUAL PARAMETERS</u>		
	mg/L	-
ALUMINUM, DISSOLVED	mg/L	-
ANTIMONY, DISSOLVED	mg/L	-
COBALT, DISSOLVED	mg/L	-
MANGANESE, DISSOLVED	mg/L	-
NICKEL, DISSOLVED	mg/L	-
BENZENE	ug/L	-
VINYL CHLORIDE	ug/L	-
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.41
CONDUCTIVITY	umhos/cm	1083
TEMPERATURE	°C	10.8
eH	millivts	-18
DISSOLVED OXYGEN	mg/L	0
<u>SUPPLEMENTAL PARAMETERS</u>		
TOTAL DISSOLVED SOLIDS	mg/L	578

(-) Not Tested

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 2

MONITOR WELL MW-04SB

PARAMETER	UNITS	10/28/99
<u>QUARTERLY PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	29
ARSENIC, DISSOLVED	mg/L	0.023
<u>ANNUAL PARAMETERS</u>		
ALUMINUM, DISSOLVED	mg/L	-
ANTIMONY, DISSOLVED	mg/L	-
COBALT, DISSOLVED	mg/L	-
MANGANESE, DISSOLVED	mg/L	-
NICKEL, DISSOLVED	mg/L	-
BENZENE	ug/L	-
VINYL CHLORIDE	ug/L	-
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.14
CONDUCTIVITY	umhos/cm	1366
TEMPERATURE	°C	11.8
eH	millivts	-5
DISSOLVED OXYGEN	mg/L	0.87
<u>SUPPLEMENTAL PARAMETERS</u>		
TOTAL DISSOLVED SOLIDS	mg/L	652

(-) Not Tested

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 3

MONITOR WELL MW-05SB

PARAMETER	UNITS	10/27/99
<u>QUARTERLY PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	0.13
ARSENIC, DISSOLVED	mg/L	<0.005
<u>ANNUAL PARAMETERS</u>		
ALUMINUM, DISSOLVED	mg/L	-
ANTIMONY, DISSOLVED	mg/L	-
COBALT, DISSOLVED	mg/L	-
MANGANESE, DISSOLVED	mg/L	-
NICKEL, DISSOLVED	mg/L	-
BENZENE	ug/L	-
VINYL CHLORIDE	ug/L	-
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.45
CONDUCTIVITY	umhos/cm	725
TEMPERATURE	°C	10.7
eH	millivts	-19
DISSOLVED OXYGEN	mg/L	0.67
<u>SUPPLEMENTAL PARAMETERS</u>		
TOTAL DISSOLVED SOLIDS	mg/L	421

(-) Not Tested

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 4

MONITOR WELL MW-06SB

PARAMETER	UNITS	10/28/99	10/28/99#
<u>QUARTERLY PARAMETERS</u>			
NITROGEN, AMMONIA	mg/L	26	24
ARSENIC, DISSOLVED	mg/L	0.164	0.164
<u>ANNUAL PARAMETERS</u>			
	mg/L	-	-
ALUMINUM, DISSOLVED	mg/L	-	-
ANTIMONY, DISSOLVED	mg/L	-	-
COBALT, DISSOLVED	mg/L	-	-
MANGANESE, DISSOLVED	mg/L	-	-
NICKEL, DISSOLVED	mg/L	-	-
BENZENE	ug/L	-	-
VINYL CHLORIDE	ug/L	-	-
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-	-
<u>FIVE YEAR PARAMETERS</u>			
BNAs	ug/L	-	-
PESTICIDES	ug/L	-	-
PCBs	ug/L	-	-
CYANIDE	mg/L	-	-
<u>FIELD PARAMETERS</u>			
pH	S.U.	7.13	7.13
CONDUCTIVITY	umhos/cm	1258	1258
TEMPERATURE	°C	11.6	11.6
eH	millivts	-4	-4
DISSOLVED OXYGEN	mg/L	0.95	0.95
<u>SUPPLEMENTAL PARAMETERS</u>			
TOTAL DISSOLVED SOLIDS	mg/L	605	612

(-) Not Tested

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 5

MONITOR WELL MW-08SB

PARAMETER	UNITS	10/28/99
<u>QUARTERLY PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	0.52
ARSENIC, DISSOLVED	mg/L	<0.005
<u>ANNUAL PARAMETERS</u>		
ALUMINUM, DISSOLVED	mg/L	-
ANTIMONY, DISSOLVED	mg/L	-
COBALT, DISSOLVED	mg/L	-
MANGANESE, DISSOLVED	mg/L	-
NICKEL, DISSOLVED	mg/L	-
BENZENE	ug/L	-
VINYL CHLORIDE	ug/L	-
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.25
CONDUCTIVITY	umhos/cm	928
TEMPERATURE	°C	11.4
eH	millivts	-10
DISSOLVED OXYGEN	mg/L	0.48
<u>SUPPLEMENTAL PARAMETERS</u>		
TOTAL DISSOLVED SOLIDS	mg/L	558

(-) Not Tested

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 6

MONITOR WELL MW-09SB

PARAMETER	UNITS	10/28/99
<u>QUARTERLY PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	13
ARSENIC, DISSOLVED	mg/L	<0.005
<u>ANNUAL PARAMETERS</u>		
ALUMINUM, DISSOLVED	mg/L	-
ANTIMONY, DISSOLVED	mg/L	-
COBALT, DISSOLVED	mg/L	-
MANGANESE, DISSOLVED	mg/L	-
NICKEL, DISSOLVED	mg/L	-
BENZENE	ug/L	-
VINYL CHLORIDE	ug/L	-
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	-
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.17
CONDUCTIVITY	umhos/cm	1239
TEMPERATURE	°C	11.3
eH	millivts	-6
DISSOLVED OXYGEN	mg/L	0.48
<u>SUPPLEMENTAL PARAMETERS</u>		
TOTAL DISSOLVED SOLIDS	mg/L	656

(-) Not Tested

ATTACHMENT B-2

Laboratory Analytical Data Summary Tables for Residential Wells

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 7

RESIDENTIAL WELL RW-04

PARAMETER	UNITS	10/28/99
<u>QUARTERLY/ANNUAL PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	0.23
ARSENIC, DISSOLVED	mg/L	<0.005
ALUMINUM, DISSOLVED	mg/L	<0.1
ANTIMONY, DISSOLVED	mg/L	<0.005
COBALT, DISSOLVED	mg/L	<0.01
MANGANESE, DISSOLVED	mg/L	0.082
NICKEL, DISSOLVED	mg/L	<0.05
BENZENE	ug/L	<5
VINYL CHLORIDE	ug/L	<1
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<1
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.44
CONDUCTIVITY	umhos/cm	709
TEMPERATURE	°C	12.8
eH	millivts	-21
DISSOLVED OXYGEN	mg/L	6.08

(-) Not Tested

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 8

RESIDENTIAL WELL RW-06

PARAMETER	UNITS	11/2/99
<u>QUARTERLY/ANNUAL PARAMETERS</u>		
NITROGEN, AMMONIA	mg/L	<0.05
ARSENIC, DISSOLVED	mg/L	<0.005
ALUMINUM, DISSOLVED	mg/L	<0.1
ANTIMONY, DISSOLVED	mg/L	<0.005
COBALT, DISSOLVED	mg/L	<0.01
MANGANESE, DISSOLVED	mg/L	0.036
NICKEL, DISSOLVED	mg/L	<0.05
BENZENE	ug/L	<5
VINYL CHLORIDE	ug/L	<1
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<1
<u>FIVE YEAR PARAMETERS</u>		
BNAs	ug/L	-
PESTICIDES	ug/L	-
PCBs	ug/L	-
CYANIDE	mg/L	-
<u>FIELD PARAMETERS</u>		
pH	S.U.	7.44
CONDUCTIVITY	umhos/cm	(1)
TEMPERATURE	°C	12.7
eH	millivts	-16
DISSOLVED OXYGEN	mg/L	1.82

(-) Not Tested

(1) Instrument malfunction, no reading available.

MARCH 2000

DATA\WELLS\ALB\RW06.XLS

HULL & ASSOCIATES, INC.
TOLEDO, OHIO

ATTACHMENT C

Field Data Summary Tables

- ATTACHMENT C-1:** Ground-water Elevation Summary Table
- ATTACHMENT C-2:** Gasprobe Monitoring Summary Table
- ATTACHMENT C-3:** Evaluation of Concentrations and Risk Calculations Table; Vent VOC Concentration Table

ATTACHMENT C-1

Ground-water Elevation Data Summary Table

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 9

SUMMARY OF GROUND-WATER ELEVATIONS¹ IN MONITOR WELLS

MONITOR WELL I.D.	10/27/99
<u>UNCONSOLIDATED SATURATED UNIT</u>	
MW01SG	982.36
MW02SG	949.61
MW03SG	946.63
MW04SG(WB)	946.07
MW05SG	948.69
MW06SG	946.92
MW07SG	946.49
MW08SG	955.30
MW09SG	945.69
MW10SG	945.68
MW11SG	--
MW12SG	--
MW13SG	--
<u>DEEP BEDROCK UNIT</u>	
MW04DB	965.24
MW16DB	--
<u>SHALLOW BEDROCK UNIT</u>	
MW01SB	--
MW02SB	948.99
MW03SBA	946.16
MW04SB(SB2)	946.07
MW05SB	946.95
MW06SB	946.08
MW07SB	946.02
MW08SB	946.10
MW09SB	946.06
MW15SB	--
MW16SB	--
<u>WEATHERED BEDROCK UNIT</u>	
MW01WB	--
MW02WB	949.33
MW03WB	946.08
MW04WB(SB1)	946.07
MW06WB	945.70
MW07WB	946.01
MW08WB	946.14
MW09WB	945.72

Notes: 1) All ground-water elevation data are in ft./USGS.
(-) Not Available

ATTACHMENT C-2

Gasprobe Monitoring Data Summary Table

ALBION-SHERIDAN TOWNSHIP LANDFILL

OPERATION AND MAINTENANCE MONITORING

TABLE 10

SUMMARY OF EXPLOSIVE GAS MONITORING IN GAS PROBES

GAS PROBE I.D.	10/27/99				
	% Gas	% Lower Explosive Limit	% H ₂ S	% O ₂	Water Level (ft)
GP-1	0	0	0	21	DRY
GP-2	0	0	0	21	DRY
GP-3	0	0	0	21	DRY
GP-4	0	0	0	21	DRY
GP-5	0	0	0	21	DRY

ATTACHMENT C-3

Evaluation of Concentration and Risk Calculations Table Vent VOC Concentrations Table

TABLE 11
ALBION-SHERIDAN TOWNSHIP LANDFILL
EVALUATION OF CONCENTRATION AND RISK CALCULATIONS

VOC Name (CAS No.)	Pre-Design Model Emission Rate (ug/s) 1	Pre-Design Model Max. Predicted Fenceline Concentration (ug/m ³) 2	Sampling Emission Rate (ug/s) 3	Sampling Max. Predicted Fenceline Concentration (ug/m ³) 4	MDEQ Screening Level (ug/m ³) 5	Unit Risk Factor (ug/m ³) ⁻¹ 6	Pre-Design Model 70 Year Risk 7	Sampling 70 Year Risk 8
Benzene (71-43-2)	468.99	9.38E-05	0.396	6.45E-05	0.1	1.00E-05	9.38E-10	6.45E-10
Carbon Tetrachloride (56-23-5)	19.39	3.87E-06	0.159	2.58E-05	0.04	2.50E-05	9.68E-11	6.45E-10
Chloroform (67-66-3)	7.13	1.43E-06	0.125	2.03E-05	0.4	2.50E-06	3.58E-12	5.07E-11
Ethylene Dichloride (107-06-2)	127.23	2.53E-05	0.102	1.66E-05	0.04	2.50E-05	6.33E-10	4.15E-10
Methylene Chloride (75-09-2)	3802.65	7.63E-04	0.130	2.12E-05	2	5.00E-07	3.82E-10	1.06E-11
Perchloroethene (127-18-4)	1939.35	3.89E-04	0.170	2.76E-05	1.7	5.88E-07	2.29E-10	1.63E-11
Trichloroethene (79-01-6)	1162.98	2.33E-04	1.472	2.40E-04	0.6	1.67E-06	3.89E-10	4.00E-10
Vinyl Chloride (75-01-4)	0.05	2.88E-04	1.472	2.40E-04	0.4	2.50E-06	7.20E-10	5.99E-10
1-1 Dichloroethylene (75-35-4)	61.16	1.22E-05	0.102	1.66E-05	0.02	5.00E-05	6.10E-10	8.29E-10
Total Risk							4.00E-09	3.61E-09

Notes:

- (1) Emissions rates calculated using USEPA Landfill Model.
- (2) Concentrations calculated from Pre-Design ISCST3 Model.
- (3) Emissions rates calculated from sampling.
- (4) Concentrations calculated from Gaussian Air Dispersion Model.
- (5) MDEQ Screening Levels.
- (6) Unit Risk factors derived from MDEQ screening levels.
- (7) Per-Design calculated 70 year risk.
- (8) Calculated 70 year risk from sampling data.

TABLE 12
ALBION-SHERIDAN TOWNSHIP LANDFILL
VENT VOC CONCENTRATIONS

Specific VOCs	Vent #1 (ug/m ³)	Vent #2 (ug/m ³)
Benzene	190	70
Vinyl Chloride	210	260
Trichloroethene	40	260
Methylene Chloride	*19	23
1-1 Dichloroethene	*22	*22
Chloroform	*27	*27
Carbon Tetrachloride	*35	*35
1-2 Cichloroethane	*22	*22
Tetrachloroethene	*38	*38

Note: * The detection limits of the sampling analyses were higher than the MDEQ screening levels.
Therefore, the detection limits of the noted VOCs were assumed to be present in the sample.

ATTACHMENT D

Site Walk Correspondence.



Hull & Associates, Inc.

3401 Glendale Avenue

Suite 300

Toledo, Ohio 43614

(419) 385-2018

fax: (419) 385-5487

December 16, 1999

Leroy Schmidt
City of Albion
112 West Cass Street
Albion, Michigan 49224

RE: Final Construction Certification Site Walkover Observations at the Albion-Sheridan
Township Landfill Superfund Site
ALB025.100.0015

Dear Mr. Schmidt:

Hull & Associates, Inc. (HAI) has developed this letter on behalf of the Settling O&M Defendants (City of Albion & Decker Manufacturing, Inc.) to document our observations and concerns regarding the completed closure activities and site conditions made during the November 2, 1999 Final Certification Site-Walkover at the above referenced Site. The following is a summary of our observations or concerns:

Surface-Water Management System

There were several areas in the perimeter ditches where it appears that insufficient erosion control (i.e., rip-rap, etc.) were placed in areas of concentrated surface water flow and along portions of the perimeter ditch that made 90 degree bends. While these areas may have been constructed per the design plans, these areas will potentially be a long-term maintenance problem given the granular nature of the vegetative soils.

Specifically, these areas include an area in the northeast portion of the Site where two drainage swales and a discharge pipe from the drainage layer discharge into the eastern ditch that immediately makes a 90-degree bend. This area of concentrated flow represents a long term maintenance problem. In the northwest portion of the Site, where the perimeter ditch discharges into the northern sedimentation basin, there is no rip-rap or other erosion control mechanism. This area will also be a long term maintenance problem. In the southwest portion, the southern perimeter ditch and the rock letdown structure to the western sedimentation basin do not line-up along the same flow line. Therefore, surface water discharge from the ditch will not enter the letdown structure. This condition will likely create extensive erosion along the western perimeter slope.

Cap Erosion Issues

Due to the lack of established vegetative cover, several erosion issues are developing. Erosion rills are present at the top of the slope on the east side of the landfill under the perimeter fence; around the southwest area on the slopes and the letdown discharging into the southwest infiltration basin; and between the southwest infiltration basin and the perimeter fence.



Leroy Schmidt
ALB025.100.0015
December 16, 1999
Page 2

Northwest Berm Construction

The outer slope of the northwest berm of the landfill appears to be at a slope of greater than the 1:1 and was noted to show signs (i.e., tensile crack) of movement at the top of the slope. It is HAI's opinion that this slope will continue to fail given the current slope ($>1:1$), the nature of the granular material used in construction, and the lack of vegetation.

Monitoring Well Repairs/ Protective Casing

Several protective casing and monitoring well stick-up elevations were noted to be less than 2.0' above grade. This condition will make it difficult to find these wells when snow is present and to see when mowing activities are completed at the Site. In addition, it was noted that monitoring well cluster #3, located in northwest portion of the Site, was located in a depression that would collect surface water. Also, observations regarding the condition of several monitor wells at the facility were noted in a letter to you dated September 7, 1999 (HAI Document #ALB025.100.0007). A more thorough inspection of the monitor well system was completed by HAI on October 27, 1999 during the first sampling event. These inspections document that there are several monitor well repairs that should be completed to ensure the integrity of the network.

Perimeter Fence

The perimeter fence installation was found to be unsatisfactory at several locations. Specifically, the vertical distance from the ground surface to the bottom of the fence was in some areas greater than two feet. In addition, the barbed wire top section of the perimeter fence was not completed along the southern and western portion of the Site.

Vegetation

The cap and associated areas were hydro-seeded. This seeding was completed in mid-October and at the time of the site walkover only a very small percentage had germinated.

Existing Site Conditions

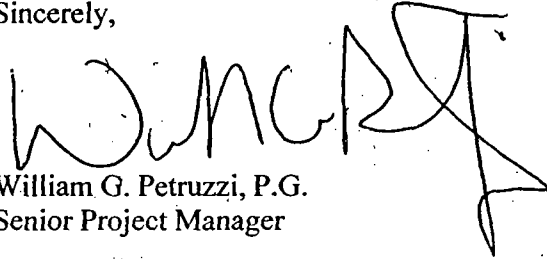
During construction activities, a vertical excavation was performed on a mound located at the northwest area of the landfill. The vertical face showed evidence of slumping which, if it continues, will cause the existing tree to fall, potentially affecting the integrity of the cap. Also, this slope needs to be regraded to minimize additional slope failures.

Debris piles consisting of trees and brush are present along the western edge of the landfill. These piles need to be handled and disposed of properly.

Leroy Schmidt
ALB025.100.0015
December 16, 1999
Page 3

Please feel free to contact me at your convenience, should you have any questions or comments regarding the above information.

Sincerely,

A handwritten signature in black ink, appearing to read 'WGP', with a stylized flourish extending from the end.

William G. Petruzzi, P.G.
Senior Project Manager

WGP/pkd

cc: Bernard Konkle, Decker Manufacturing Corp.
Terry Baehr, Hull & Associates, Inc.

ATTACHMENT E

Photo-Documentation











